JVC

Getting Started

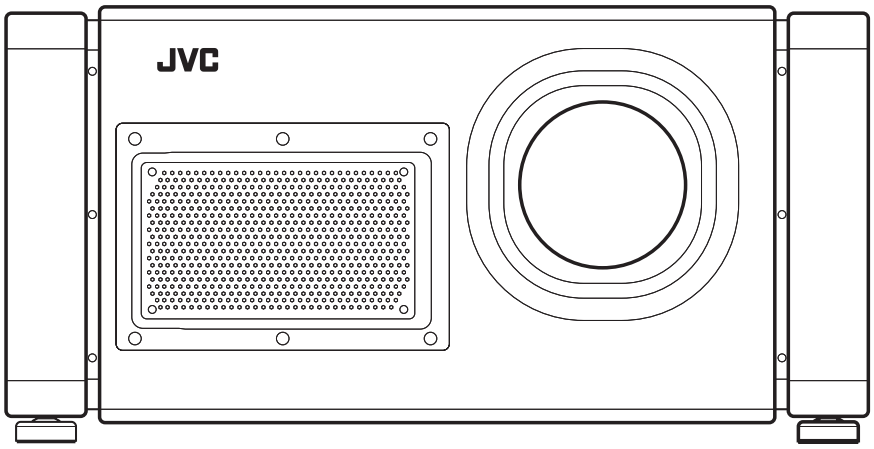
Setup

Operation and Settings

Others

D-ILA® PROJECTOR

DLA-SH4K INSTRUCTIONS



Thank you for purchasing this JVC product.

Please study this instruction manual carefully before starting to operate the unit, in order to use the unit correctly. We take no responsibility for any problems resulting from misuse of this unit by operating this equipment other than instructed in this manual.

For Customer use :

Enter below the serial No. which is located on the bottom side of the cabinet. Retain this information for future reference.

Model No.	DLA-SH4K
Serial No.	

LCT2370-001B

Safety Precautions

IMPORTANT INFORMATION

WARNING:
TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

WARNING:
THIS APPARATUS MUST BE EARTHED.

CAUTION:
To reduce the risk of electric shock, do not remove cover. Refer servicing to qualified service personnel.

This projector is equipped with a 3-blade grounding type plug to satisfy FCC rule. If you are unable to insert the plug into the outlet, contact your electrician.

FCC INFORMATION (U.S.A. only)

CAUTION:
Changes or modification not approved by JVC could void the user's authority to operate the equipment.

NOTE:
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

MACHINE NOISE INFORMATION (Germany only)
Changes Machine Noise Information Ordinance 3. GSGV, January 18, 1991: The sound pressure level at the operator position is equal or less than 70 dB (A) according to ISO 7779.

About the installation place

Do not install the projector in a place that cannot support its weight securely.

If the installation place is not sturdy enough, the projector could fall or overturn, possibly causing personal injury.

IMPORTANT SAFEGUARDS

Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. But IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD. In order not to defeat the safeguards incorporated into this product, observe the following basic rules for its installation, use and service. Please read these Important Safeguards carefully before use.

- All the safety and operating instructions should be read before the product is operated.
- The safety and operating instructions should be retained for future reference.
- All warnings on the product and in the operating instructions should be adhered to.
- All operating instructions should be followed.
- Place the projector near a wall outlet where the plug can be easily unplugged.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use attachments not recommended by the product manufacturer as they may be hazardous.
- Do not use this product near water. Do not use immediately after moving from a low temperature to high temperature, as this causes condensation, which may result in fire, electric shock, or other hazards.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. The product should be mounted according to the manufacturer's instructions, and should use a mount recommended by the manufacturer.
- When the product is used on a cart, care should be taken to avoid quick stops, excessive force, and uneven surfaces which may cause the product and cart to overturn, damaging equipment or causing possible injury to the operator.

PORTABLE CART WARNING
(symbol provided by RETAC)

S3126A

- Slots and openings in the cabinet are provided for ventilation. These ensure reliable operation of the product and protect it from overheating. These openings must not be blocked or covered. (The openings should never be blocked by placing the product on bed, sofa, rug, or similar surface. It should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.) For proper ventilation, separate the product from other equipment, which may prevent ventilation and keep a distance (See page 11).
- This product should be operated only with the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.
- This product is equipped with a three-wire plug. This plug will fit only into a grounded power outlet. If you are unable to insert the plug into the outlet, contact your electrician to install the proper outlet. Do not defeat the safety purpose of the grounded plug.

– Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at doors, plugs, receptacles, and the point where they exit from the product.
– For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power line surges.
– Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.
– Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
– Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages and other hazards. Refer all service to qualified service personnel.
– Unplug this product from the wall outlet and refer service to qualified service personnel under the following conditions:
  a) When the power supply cord or plug is damaged.
  b) If liquid has been spilled, or objects have fallen on the product.
  c) If the product has been exposed to rain or water.
  d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the Operation Manual, as an improper adjustment of controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  e) If the product has been dropped or damaged in any way.
  f) When the product exhibits a distinct change in performance - this indicates a need for service.
– When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or with same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
– Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
– The product should be placed more than one foot away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.
– When connecting other products such as VCR's, and DVD players, you should turn off the power of this product for protection against electric shock.
– Do not place combustibles behind the cooling fan. For example, cloth, paper, matches, aerosol cans or gas lighters that present special hazards when over heated.
– Do not look into the projection lens while the illumination lamp is turned on. Exposure of your eyes to the strong light can result in impaired eyesight.
– Do not look into the inside of this unit through vents (ventilation holes), etc. Do not look at the illumination lamp directly by opening the cabinet while the illumination lamp is turned on. The illumination lamp also contains ultraviolet rays and the light is so powerful that your eyesight can be impaired.
– Do not drop, hit, or damage the light-source lamp (lamp unit) in any way. It may cause the light-source lamp to break and lead to injuries. Do not use a damaged light source lamp. If the light-source lamp is broken, ask your dealer to repair it. Fragments from a broken light-source lamp may cause injuries.
– The light-source lamp used in this projector is a high pressure lamp. Be careful when disposing of the lightsource lamp. If anything is unclear, please consult your dealer.
– Do not ceiling-mount the projector to a place which tends to vibrate; otherwise, the attaching fixture of the projector could be broken by the vibration, possibly causing it to fall or overturn, which could lead to personal injury.
– Use only the accessory cord designed for this product to prevent shock.

***DO NOT allow any unqualified person to install the unit.**

Be sure to ask your dealer to install the unit (e.g. attaching it to the ceiling) since special technical knowledge and skills are required for installation. If installation is performed by an unqualified person, it may cause personal injury or electrical shock.

Safety Precautions (Cont'd)

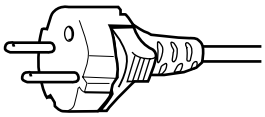
POWER CONNECTION

The power supply voltage rating of this product is AC110 V – 120 V, AC200 V – 240 V, the power cord attached conforms to the following power supply voltage. Use only the power cord designated by our dealer to ensure Safety and EMC.

When it is used by other power supply voltage, power cable must be changed.

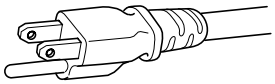
Ensure that the power cable used for the projector is the correct type for the AC outlet in your country. Consult your product dealer.

Power cord



For European continent countries:
AC200 V – 240 V
(3.3 m)

Power cord



Power supply voltage:
AC110 V – 120 V
(3.3 m)

WARNING:

Do not cut off the main plug from this equipment.

If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or adapter or consult your dealer.
If nonetheless the mains plug is cut off, dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the main supply. If a new main plug has to be fitted, then follow the instruction given below.

WARNING:
THIS APPARATUS MUST BE EARTHED.

IMPORTANT:
The wires in the mains lead on this product are colored in accordance with the following cord:
Green-and-yellow : Earth
Blue : Neutral
Brown : Live
As these colors may not correspond with the colored making identifying the terminals in your plug, proceed as follows:
The wire which is colored green-and-yellow must be connected to the terminal which is marked ⏚ with the letter E or the safety earth or colored green or green-and-yellow.
The wire which is colored blue must be connected to the terminal which is marked with the letter N or colored black.
The wire which is colored brown must be connected to the terminal which is marked with the letter L or colored red.

EMC Supplement

– This equipment is in conformity with the provisions and protection requirements of the corresponding European Directives.
This equipment is designed for professional projector appliances and can be used in the following environments.
- Controlled EMC environment (for example purpose built broadcasting or recording studio), and the rural outdoors environment (far away from railways, transmitters, overhead power lines, etc).

In order to keep the best performance and furthermore for electromagnetic compatibility we recommend to use the cables not exceeding the following length:

Cables		Length
Power cord	Power supply cord	3.3 m
DVI (X4) Cable	Shielded cable	5.0 m
USB Cable	Shielded cable	2.0 m
LAN Cable	Shielded cable	2.0 m
RS-232C Cable	Shielded cable	1.6 m

- The inrush current of this apparatus is 9.705 amperes.

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

In case where the strong electromagnetic waves or magnetism are near the signal cable, the picture will contain noise. In such cases, please keep the cable away from the sources of the disturbance.

Dear Customer,

This apparatus is in conformance with the valid European directives and standards regarding electromagnetic compatibility and electrical safety.

European representative of Victor Company of Japan, Limited is:
JVC Technology Centre Europe GmbH
Company name changed in:
JVC Technical Services Europe GmbH
Postfach 10 05 52
61145 Friedberg
Germany

Contents

Getting Started

Safety Precautions 2
Contents 6
Check the Accessories/Optional Accessories 6
  Optional Accessories 6
Features 7
How to Read this Manual 7
Precautions During Use 8
Names and Functions of Parts 9

Setup

Installation 11
  Minimum Space Required 11
  Projector Installation 12
  Installing the Projector and Screen 12
  Screen Size and Projection Distance 15
Connecting Video Signals of the Computer 16
  Connection During Single-Screen Mode Display . . . 16
  Connection During Two-Screen/ Four-Screen Mode Display 18
Connection Using a LAN Cable 20
  Connection Example 20
  Specifications of PC for Controlling this Projector . . . 20
Configuring the Network Settings 20
Using the Mail Delivery Feature 21
  Connection Example 21

Operation and Settings

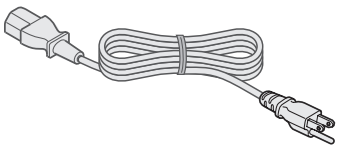
Projecting Image 22
  Useful Features During Projection 23
Settings Menu 24
  Main Menu 24
  Image Menu 26
  Setting Menu 27
  Convergence Menu 28
  Lens Menu 29
  Option Menu 30
  Network Menu 31
  Mail Menu 32
RS-232C Interface 34
  Communication Specifications 34
  Command Format 34

Others

Maintenance 36
  Cleaning and Replacing the Filter 36
  Routine Servicing 37
  Replacement of Light Source Lamp 37
Troubleshooting 38
What to do when these messages are displayed . . . 40
Warnings Using Indicators 41
Latest Error 42
Specifications 43
Dimensional Outline Drawing 45

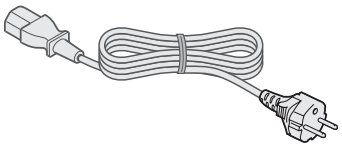
Check the Accessories/ Optional Accessories

For the US market (x1)



Power Cord
For USA (3.3 m)

For the EU market (x1)



Power Cord
For European continent countries (3.3 m)

- Other items include the instruction manual, and other printed materials.

Optional Accessories

- Replacement filter/sponge (front)
  LC43009-001A (Filter)
  LC43030-001A (Sponge)
- Replacement filter/sponge (right side)
  LC43009-002A (Filter)
  LC43030-002A (Sponge)

Features

Ultra-high resolution, high contrast, and high quality projector

■ Ultra-high resolution of 4096×2400

This projector comes with a newly developed 1.27" and 4096×2400 pixel D-ILA (Direct-drive Image Light Amplifier) device, and achieves an ultra-high resolution of 9.83 million pixels, which is four times that of full HD.

■ High contract ratio of 10,000:1

A high contrast ratio of 10,000:1 (native) is achieved through combining the D-ILA device with WireGrid (inorganic reflective polarizing plate) that is employed in the new optical engine.

High flexible installation

■ Design is compact and light, and enables stacking

- This product is about 65 % the size of existing JVC projectors of the same class, and its weight is as light as 55 kg (excluding lens).
- Stackable design enhances installation for special applications (e.g. 3D).

■ Vertical/Horizontal lens shift

This projector enables not only vertical (±50 %), but also horizontal (±25 %) lens shift, which enables a larger degree of flexibility in the layout.

■ Inclined installation

This product can be installed at a tilt angle of up to ±90°, which provides greater flexibility in the location of the projection screen.

■ Low power consumption

This product helps to save power with a consumption of not more than 1.5 kW.

User-friendly interface and high operability

■ Equipped with DVI (Dual-Link)×4 input terminals

■ Network-supported

- In addition to the conventional RS-232C, it also provide support for connection using Ethernet. You can make adjustments or configure settings from the web browser on the PC without having to install any special software.
- Network connection enables you to make perform adjustment or configure settings for multiple projectors using a single PC.
- The Email feature enables you to send reports on the lamp replacement timing or error messages to a remote location.

■ Comes with various built-in test patterns (six types including Cross Hatch, Color Bars, etc.)

Enables image adjustment without the need of external signal sources.

Features that enable flexible display and expression

■ Supports multi screens (single screen, two-screen, and four-screen modes)

■ Comes with three types of built-in gamma tables. Enables configuration of gradation expression settings according to the video image

How to Read this Manual

How to Read this Manual

■ Symbols used in this manual

CAUTION : Describes precautions to note when operating this product.

NOTE : Describes reference information, such as functions and restrictions during use.

☞ : Indicates the page or section to refer to.

■ Content of this manual

- Personal computers or computers are expressed as computers or PCs in this manual.
- Contents of this manual are the copyright of JVC. All rights reserved. Unauthorized reproduction and duplication of this manual, in whole or in part, without the permission of JVC is strictly prohibited.
- The names of other companies' products that appear in this manual are the trademark or registered trademark of the respective companies. Symbols such as ™, ®, and © are omitted in this manual.
- Designs, specifications, and other details described in this manual may be modified for improvement without prior notice.

Precautions During Use

Burning-in of D-ILA Device

■Do not allow the same still picture to be projected for a long time or an abnormally bright video image to be projected

Do not project still images with a high brightness or high contrast on the screen for a long time. This video image could be burnt into the D-ILA device.

Pay special attention when projecting video games and computer program images.
Motion images such as normal video playback images do not pose the burning-in problem.

Viewing Conditions (Brightness of Room)

■Brightness of the room

Avoid direct exposure of screen to direct sunlight and lights such as by using a curtain. Images can be well projected by darkening the brightness of the room.

■Do not view screen for prolonged hours

Looking at the screen continually for a prolonged time is tiring to the eyes. Allow your eyes to rest at intervals.

■Do not use this unit when image flickers

due to installation conditions and environment. This may cause your eyesight to deteriorate.

Environment of Use

■Do not use this projector in rooms with cigarette smoke or oily smoke

Do not use this projector in rooms with cigarette smoke or oily smoke. This may cause the unit to malfunction.

■When mounting this projector to the ceiling

Check the temperature around the projector unit. When a heater is in use, the ceiling may reach a temperature higher than anticipated, hence leading to malfunction of the unit.

Maintenance Procedures

■Clean dirt on the cabinet

with a soft cloth. In case of heavy soiling, soak a cloth in neutral detergent diluted with water, wring dry and wipe, followed by wiping again using a dry cloth.

■Pay attention to the following to prevent the cabinet from deteriorating in condition, getting damaged, or the paint from coming off.

- Do not wipe with a stiff cloth
- Do not wipe with force
- Do not wipe with thinner or benzene
- Do not spray volatile chemicals like insecticide
- Do not allow prolonged contact with rubber or plastic products

■Clean dirt on the lens

using commercial blowers or lens cleaning papers (for cleaning glasses and cameras).

Do not use fluid-type cleaning agents. This may lead to peeling of the surface coating film.

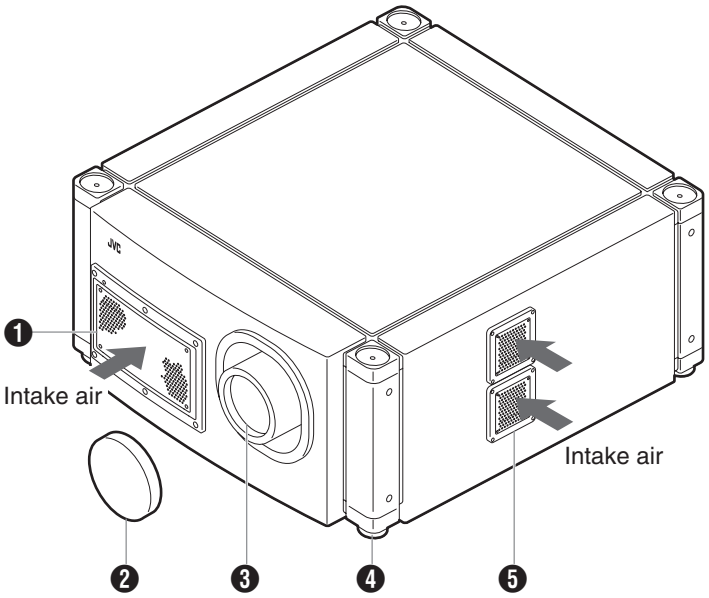
Lens surface is fragile. Avoid rubbing it hard or knocking it.

Gauging replacement time of components

This product comes with replacement components required for maintaining the functions of this product, such as optical components, cooling fan and filters. The timing for replacing components varies considerably according to the frequency and environment of use. For details on replacement of components (except filters), please consult any nearby JVC servicing center.

Names and Functions of Parts

Front/Right Side



❶ Air Inlet/Filter

The air inlets absorb air to cool the interior of the projector. A filter is mounted inside the projector to remove dirt in the air that enters through the inlets. Clean the filter regularly. (☞ Page 36)

CAUTION:

- Do not block the air inlets with papers, cloth, or soft cushions. Doing so may cause heat to trap inside the projector and result in fire or malfunction.

❷ Lens Cap

Fit the cap on the lens when this projector is not in use to prevent the lens from becoming dirty.

CAUTION:

- Do not project images with the lens cap attached. The lens cap may be deformed due to the heat, or the projector may malfunction.

❸ Lens

This projector makes use of a x1.22 power zoom lens. Remove the lens cap before projection.

❹ Adjustable Feet (x 4)

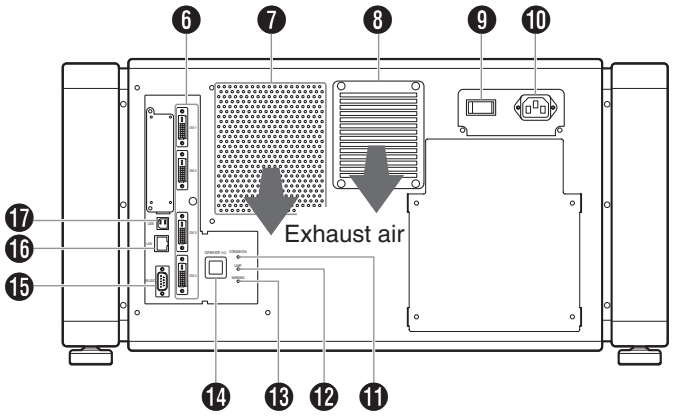
Adjust the feet until the projector is level. The adjustable range is 20 mm for each. (☞ Page 12)

❺ Air Inlet/Filter

The air inlets absorb air to cool the interior of the projector. A filter is mounted inside the projector to remove dirt in the air that enters through the inlets. Clean the filter regularly. (☞ Page 36)

Names and Functions of Parts (Cont'd)

Rear



❻ [DVI 1 to 4] Terminal

This is an input terminal for video signals. Connect it to the video output terminal of the computer.
(☞ Page 17, 19)

❼ Vent Hole

Warm air exits from the hole after cooling the projector.

CAUTION:

- Do not block the vent holes with papers, cloth, or soft cushions. Doing so may cause heat to trap inside the projector and result in fire or malfunction.

❽ Vent Hole (For Lamp)

Warm air exits from the hole after cooling the lamp.

❾ Main Power Supply Switch

Use this to turn ON/OFF the main power supply of the projector unit.

❿ AC Power Input Terminal

Connect the supplied cord to this terminal.

⓫ [STANDBY/ON] Indicator

Lit (Red)	: When in the standby mode.
Lit (Green)	: When power is supplied.
Blinking (Red)	: When in the cooling (cool down) mode. (☞ Page 23)
Blinking (Green)	: When the projected image is temporarily hidden. (☞ Page 23)

NOTE:

- For details on indicator displays during warnings, refer to "Warnings Using Indicators". (☞ Page 41)

⓬ [LAMP] Indicator

This indicator lights up when the lamp time exceeds 1400 hours.

NOTE:

- For details on indicator displays during warnings, refer to "Warnings Using Indicators". (☞ Page 41)
- A lamp life message appears when the lamp time has exceeded 1500 hours. (☞ Page 40)

⓭ [WARNING] Indicator

This indicator lights up when abnormality occurs on this projector. For details, refer to "Warnings Using Indicators". (☞ Page 41)

⓮ [OPERATE I/⏻] Button

Pressing this button for one second or longer when in the standby mode (main power supply is ON) turns on the power of the projector unit. Pressing it for one second or longer when the power is ON switches the projector to the standby mode.

⓯ [RS-232C] Terminal

This is the RS-232C interface-specific terminal. This projector can be controlled by connecting it to a computer using a RS-232C cable.

⓰ [LAN] Terminal

Enables control of this projector using a computer that is connected to the network.

⓱ [USB] Terminal

Enables control of this projector by connecting it to a computer.

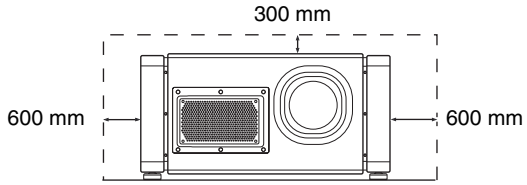
Installation

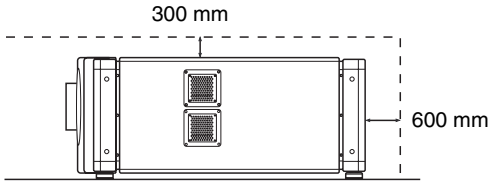
Please read the following carefully when installing this unit.

Minimum Space Required

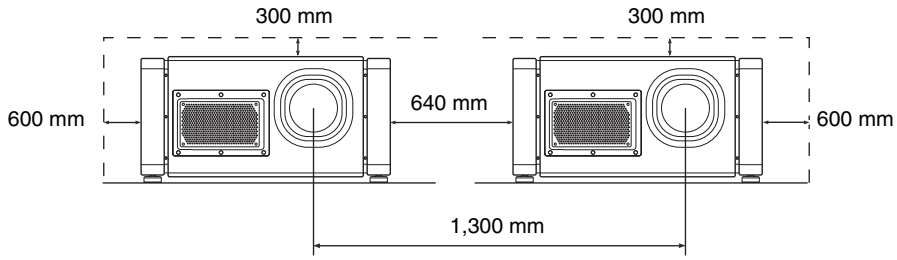
Do not use a cover that may enclose this unit or block the air inlets/vent holes. Allow sufficient space around this unit. When this unit is enclosed in a space with dimensions as indicated below, ventilate accordingly so that the internal and external temperatures are the same.

■ When using one set of projector

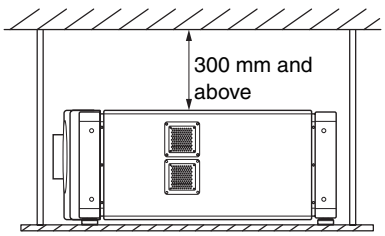




■ When using two sets of projectors side by side



■ When the projector is suspended



NOTE:

- To prevent the projector from falling or toppling, it is recommended that the holder be fastened to the unit using bolts.
- To mount the projector to the ceiling, mount a special shelf to the ceiling, followed by installing the unit on the shelf. For safety and maintenance purposes, equipment that eases adjustment to a suitable height for maintenance is required.

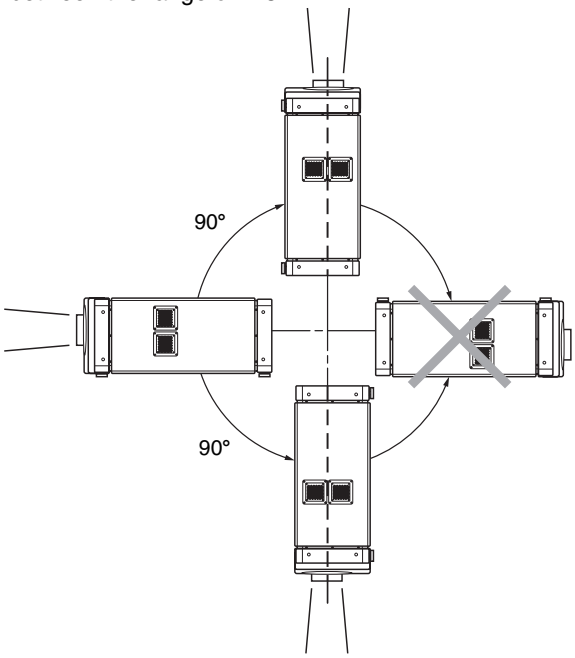
CAUTION:

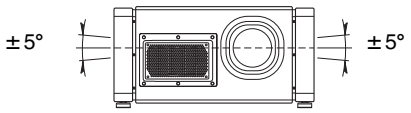
- Special expertise and techniques are required for mounting this unit. Be sure to ask your dealer or a specialist to perform mounting.

Installation (Cont'd)

Projector Installation

You can install this projector between ±90°.
Images will be properly displayed if the horizontal angle is between the range of ±5°.



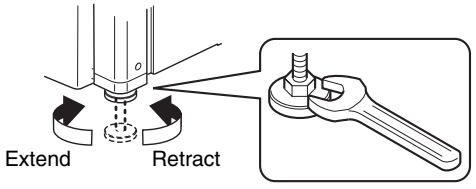


CAUTION:

- To ceiling-mount this unit, special expertise and skills are necessary. Make to sure request the authorized dealer or specialized work contractors for installation.
- The projector cannot be installed upside down.

■ Adjusting the Inclination

Adjust the horizontal angle of the projector.
Lift the projector and turn the nut of the adjustable foot with a spanner in the direction indicated by the arrow to extend or retract the foot. The adjustable range is 20 mm.

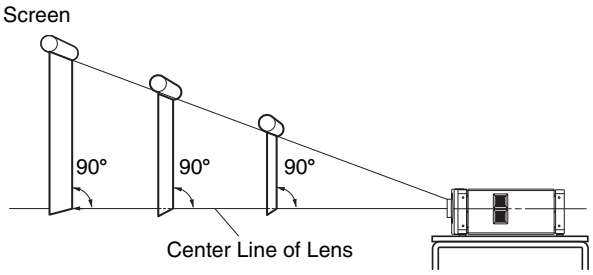


Installing the Projector and Screen

It is recommended that this projector be installed at right angle to the screen.
You can shift the projection screen position vertically between 0 % to ±50 %, and horizontally between 0 % to ±25 %. (Lens shift feature)

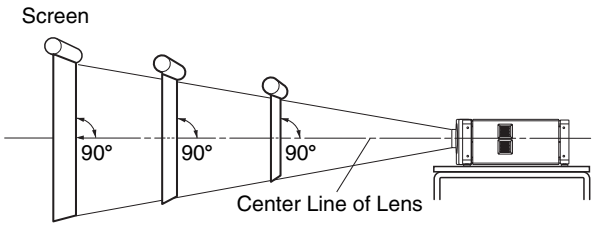
■ When shift amount in the upward direction is +50 %

Install the projector such that the lower end of the projection screen is at the same height as the center of the lens.



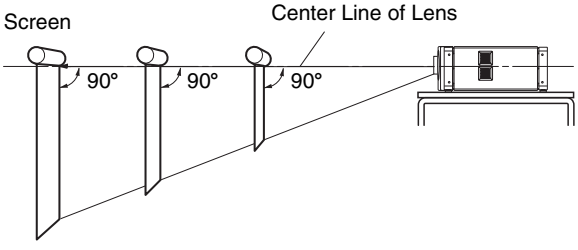
■ When shift amount in the upward/downward direction is 0 %

Install the projector such that the center of the projection screen is at the same height as the center of the lens.



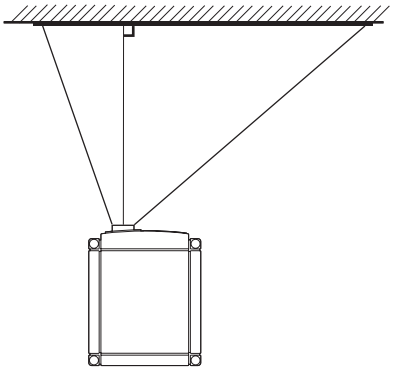
■ When shift amount in the downward direction is –50 %

Install the projector such that the upper end of the projection screen is at the same height as the center of the lens.



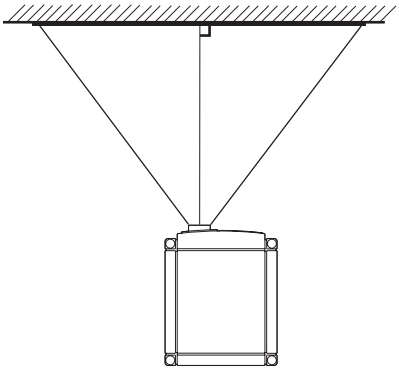
■ When shift amount in the right direction is +25 %

Install the projector such that the center of the lens is aligned with the 1/4 position from the left edge of the screen.



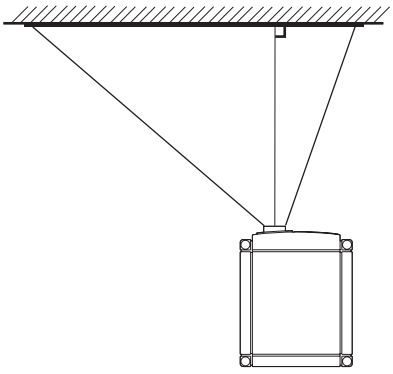
■ When shift amount in the left/right direction is 0 %

Install the projector such that the center of the lens is aligned with the center of the screen.

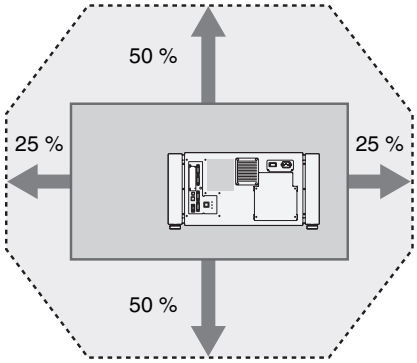


■ When shift amount in the left direction is –25 %

Install the projector such that the center of the lens is aligned with the 1/4 position from the right edge of the screen.



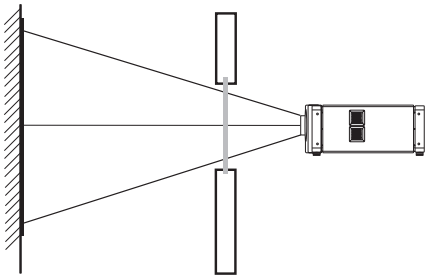
■ Movable Range of Projected Image



NOTE:

- When using the lens shift feature, do not exceed the range (shift amount) as shown above. If the shift amount exceeds the range as shown, shadows will appear on the projected image.

■ When light passes through the glass of projection booth



NOTE:

- When light passes through the glass, the quantity of light decreases. Make sure that the glass of the projection booth is not more than one piece.
- Do not use glass if possible.
- When projecting light on an inclined glass surface, adjust the glass angle as well as installation angle of this unit accordingly to prevent impact on the image due to diffuse reflection.

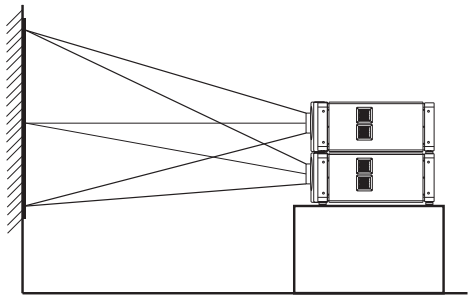
Installation (Cont'd)

Installing the Projector and Screen (Cont'd)

■ Overlaying projected images

● Projecting images by stacking projectors

The lens shift feature enables you to use up to three stacked projectors at the same time.
Stacking projectors enhances the brightness level, and helps to project images that are sufficiently bright even when the venue is relatively big or bright.

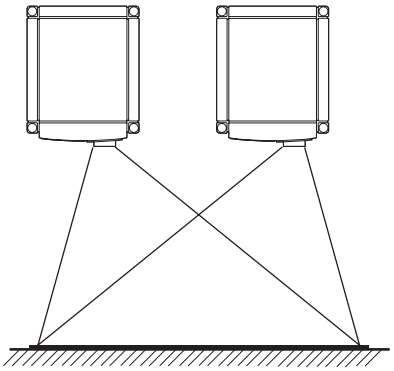


CAUTION:

- When the projectors are stacked together during use, ensure that the installation site is sufficiently strong and there is proper air cooling around the projectors.
  Take the necessary measures to prevent the projectors from toppling or falling off so as to ensure safety during emergency situations, such as earthquakes, and to prevent accidents from occurring. For details, please consult your authorized dealer.

● Projecting images by arranging projectors side by side

The lens shift feature enables you to use up to two projectors that are arranged side by side.
Arranging two projectors side by side enhances the brightness level, and helps to project images that are sufficiently bright even when the venue is relatively big or bright.
When projecting images by arranging the projectors side by side, adjust the shift amount of both projectors accordingly to superimpose the images.



NOTE:

- When using the projectors by arranging them side by side, ensure that the installation site is sufficiently strong and there is proper air cooling around the projectors. For details, please consult your authorized dealer. (☞ Page 11)

Screen Size and Projection Distance

Adjust the distance from the lens to the screen to achieve your desired screen size.
This projector uses a 1.22x power zoom lens for projection.

Projection Screen Size (Diagonal Length)	Image Width	Projection distance	
		Tele End	Wide End
80" (Approx. 2.03 m)	1.75 m	3.19 m	2.58 m
90" (Approx. 2.29 m)	1.97 m	3.60 m	2.91 m
100" (Approx. 2.54 m)	2.19 m	4.01 m	3.25 m
110" (Approx. 2.79 m)	2.41 m	4.42 m	3.58 m
120" (Approx. 3.05 m)	2.63 m	4.83 m	3.91 m
130" (Approx. 3.30 m)	2.85 m	5.24 m	4.25 m
140" (Approx. 3.56 m)	3.07 m	5.65 m	4.58 m
150" (Approx.3.81 m)	3.29 m	6.06 m	4.91 m
160" (Approx. 4.06 m)	3.51 m	6.46 m	5.25 m
170" (Approx. 4.32 m)	3.73 m	6.87 m	5.58 m
180" (Approx. 4.57 m)	3.94 m	7.28 m	5.91 m
190" (Approx. 4.83 m)	4.16 m	7.69 m	6.24 m
200" (Approx. 5.08 m)	4.38 m	8.10 m	6.58 m
210" (Approx. 5.33 m)	4.60 m	8.51 m	6.91 m
220" (Approx. 5.59m)	4.82 m	8.92 m	7.24 m
230" (Approx. 5.84 m)	5.04 m	9.33 m	7.58 m
240" (Approx. 6.10 m)	5.26 m	9.74 m	7.91 m
250" (Approx. 6.35 m)	5.48 m	10.15 m	8.24 m
260" (Approx. 6.60 m)	5.70 m	10.55 m	8.58 m
270" (Approx. 6.86 m)	5.92 m	10.96 m	8.91 m
280" (Approx. 7.11 m)	6.14 m	11.37 m	9.24 m
290" (Approx. 7.37 m)	6.36 m	11.78 m	9.57 m
300" (Approx. 7.62 m)	6.57 m	12.19 m	9.91 m

NOTE:

- The distance indicated in the table is an estimated value when an image with a resolution of 4096 × 2400 is projected. Please use them as reference during installation.

Connecting Video Signals of the Computer

Connection During Single-Screen Mode Display

The single-screen mode displays signals (up to four signals) from a computer as a single video image.
To select to the single-screen mode, set “Display Mode” in the Setting menu to “Single”. (☞ Page 27)

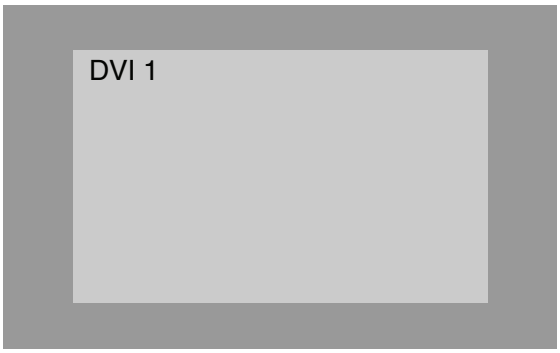
■ Possible Input Signals and Projected Image

Computer			Projector Terminal for Connection	Output Status		Displayed Projector Image
Resolution	Channel	Link Status				
4096×2400	2ch	Dual	DVI 1, DVI 3	2 Stripes	2048×2400	4096×2400
	4ch	Single	DVI 1 - DVI 4	Cross	2048×1200	
				4 Stripes	1024×2400	
4096×2160	2ch	Dual	DVI 1, DVI 3	2 Stripes	2048×2160	4096×2160
	4ch	Single	DVI 1 - DVI 4	Cross	2040×1080	
				4 Stripes	1024×2160	
3840×2400	2ch	Dual	DVI 1, DVI 3	2 Stripes	1920×2400	3840×2400
	4ch	Single	DVI 1 - DVI 4	Cross	1920×1200	
				4 Stripes	960×2400	
3840×2160	2ch	Dual	DVI 1, DVI 3	2 Stripes	1920×2160	3840×2160
	4ch	Single	DVI 1 - DVI 4	Cross	1920×1080	
				4 Stripes	960×2160	
2048×1200	1ch	Single	DVI 1	Normal	2048×1200	4096×2400
2048×1080	1ch	Single	DVI 1	Normal	2048×1080	4096×2160
1920×1200	1ch	Single	DVI 1	Normal	1920×1200	3840×2400
1920×1080	1ch	Single	DVI 1	Normal	1920×1080	3840×2160
1600×1200	1ch	Single	DVI 1	Normal	1600×1200	3200×2400
1280×1024	1ch	Single	DVI 1	Normal	1280×1024	2560×2048
1024×768	1ch	Single	DVI 1	Normal	1024×768	2048×1536
800×600	1ch	Single	DVI 1	Normal	800×600	1600×1200
640×480	1ch	Single	DVI 1	Normal	640×480	1280×960

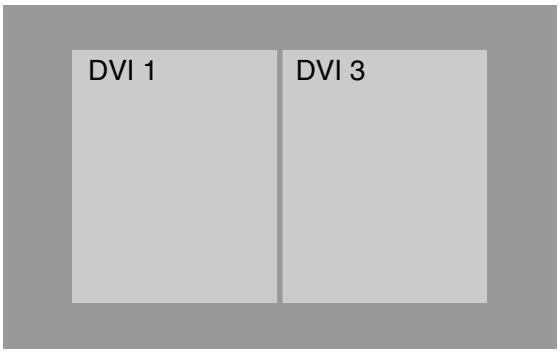
NOTE:

- This projector converts the frame rate to 60 Hz regardless of the synchronizing signal frequency at the computer’s end.
- If the resolution of the PC is 2048×1200 or lower, images are displayed upon doubling the number of the vertical and horizontal pixels.

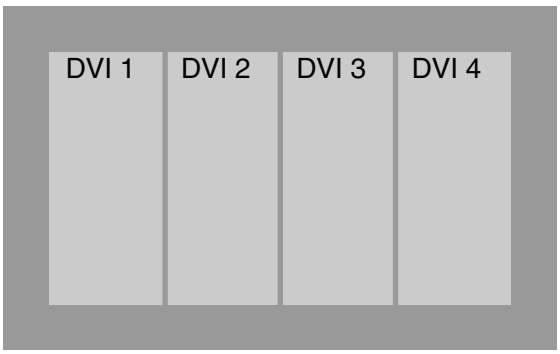
Normal



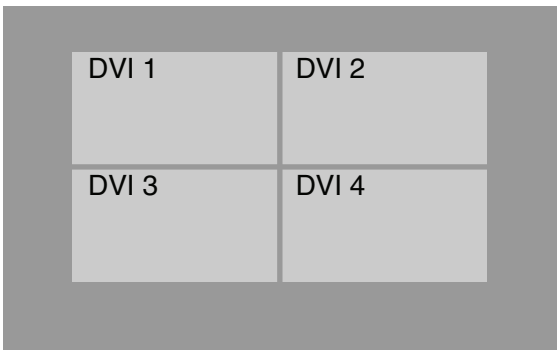
2 Stripes



4 Stripes

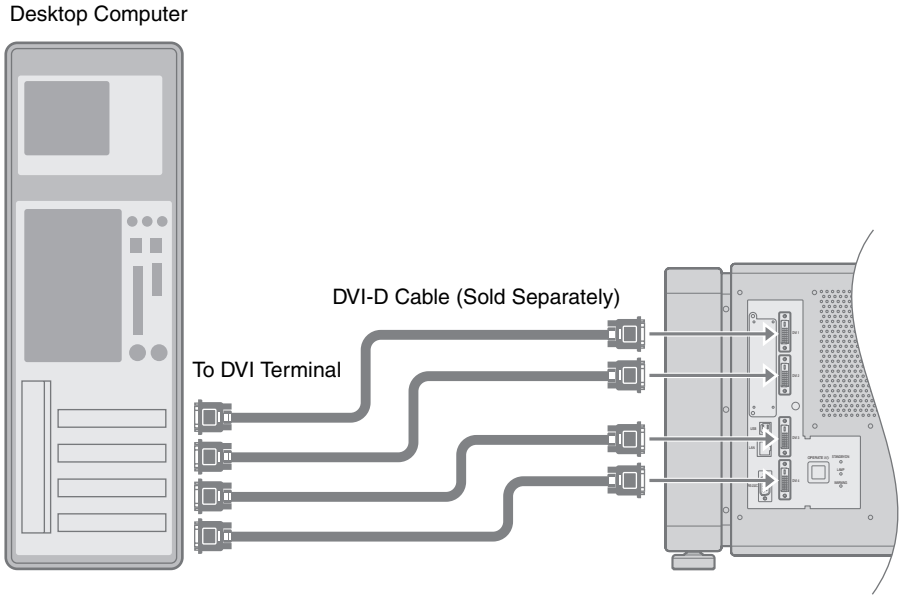


Cross



■ Connection During Single-Screen Mode Display

Below is the connection example for four-channel signals from the computer.
For two-channel signals from the computer, connect to the [DVI 1] and [DVI 3] terminals of this projector.



CAUTION:

- Depending on your DVI-D cable, the signal may attenuate and the image become unstable.
- Use of DVI-D cables compliant with the DDWG standard is recommended.

Connecting Video Signals of the Computer (Cont'd)

Connection During Two-Screen/Four-Screen Mode Display

The two-screen/four-screen mode enables simultaneous display of signals from two or four computers.
To select the two-screen mode, set "Display Mode" in the Setting menu to "Double". To select the four-screen mode, set it to "Cross". (☞ Page 27)

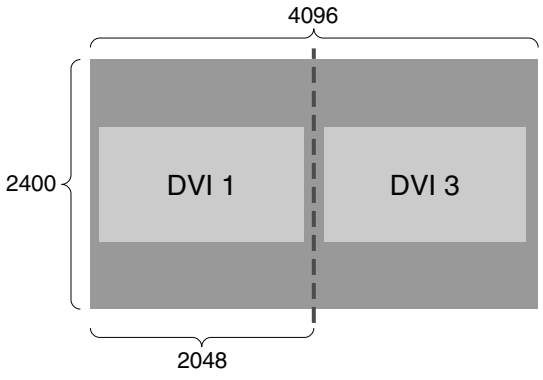
■ Possible Input Signals and Projected Image

Computer 1, Computer 2			Output Status	
Resolution	Channel	Link Status		
2048×1200	1ch	Single	Normal	2048×1200
2048×1080	1ch	Single	Normal	2048×1080
1920×1200	1ch	Single	Normal	1920×1200
1920×1080	1ch	Single	Normal	1920×1080
1600×1200	1ch	Single	Normal	1600×1200
1280×1024	1ch	Single	Normal	1280×1024
1024×768	1ch	Single	Normal	1024×768
800×600	1ch	Single	Normal	800×600
640×480	1ch	Single	Normal	640×480

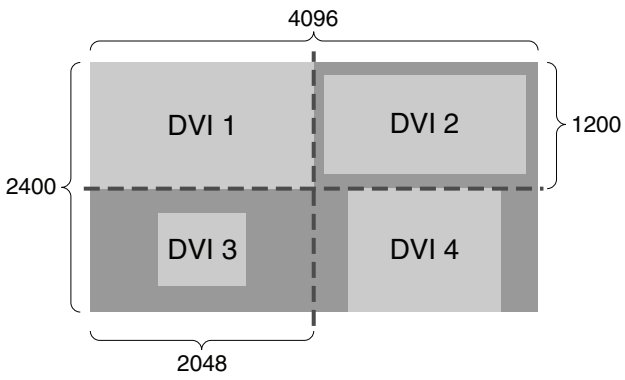
NOTE:

- This projector converts the frame rate to 60 Hz regardless of the synchronizing signal frequency at the computer's end.
- The respective signals are displayed at the center of the split screen.
- When in the two-screen mode, the screen appears blue (or black depending on the setting) when there is no input.

Two-Screen Mode
(Example) DVI 1: 1920×1080,
DVI 3: 1920×1080

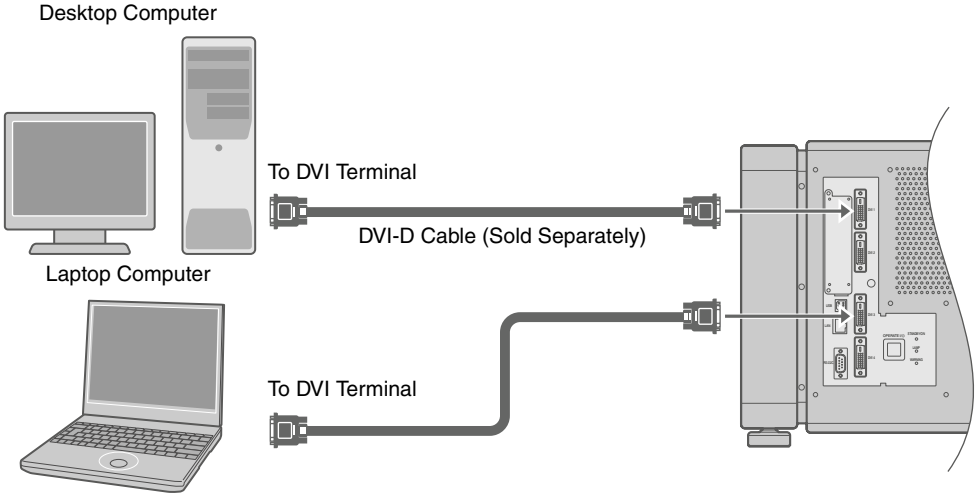


Four-Screen Mode
(Example) DVI 1: 2048×1200, DVI 2: 1920×1080,
DVI 3: 1024×768, DVI 4: 1600×1200

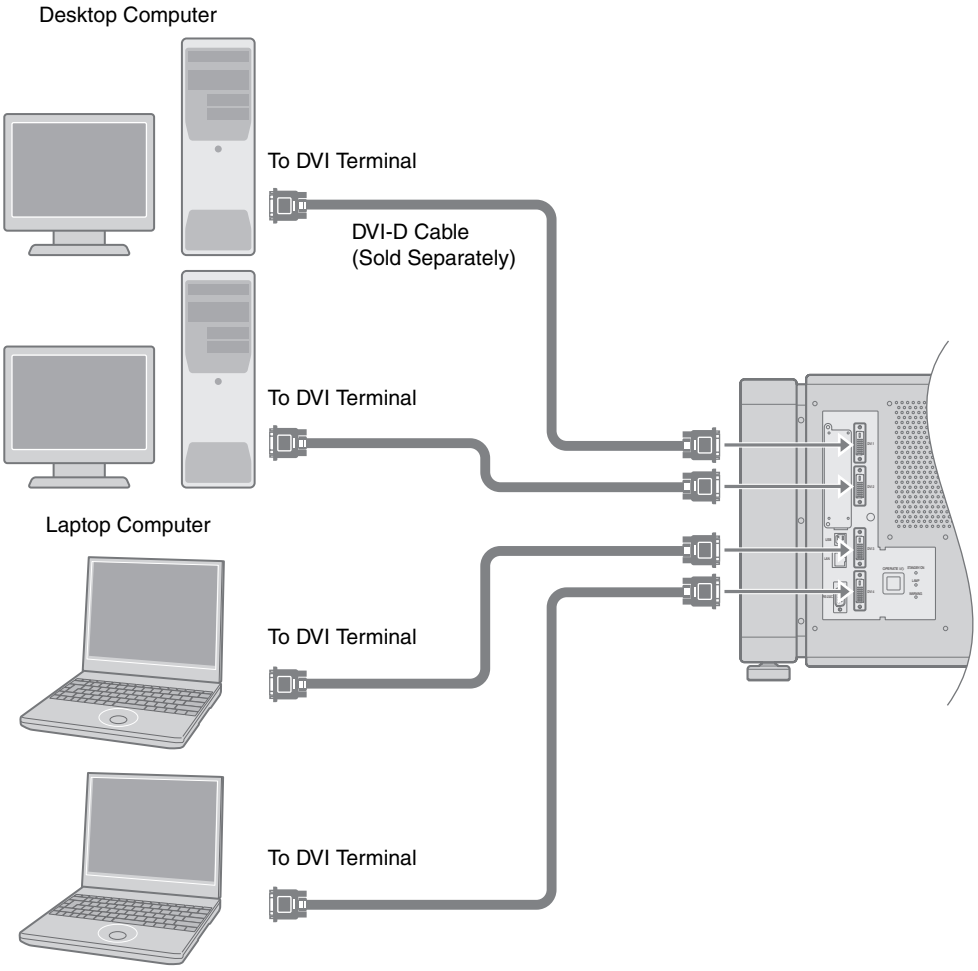


■ Connection During Two-Screen/Four-Screen Mode Display

● Connection Example During Two-Screen Mode



● Connection Example During Four-Screen Mode



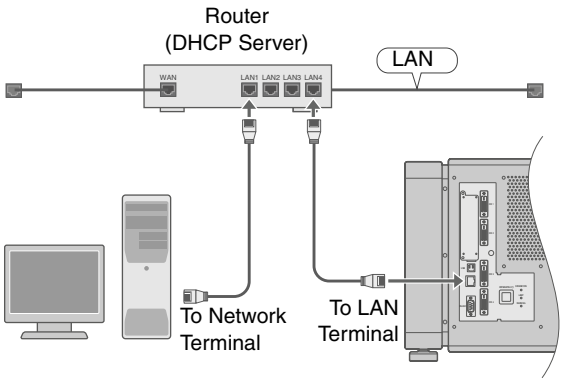
CAUTION:

- Depending on your DVI-D cable, the signal may attenuate and the image become unstable.
- Use of DVI-D cables compliant with the DDWG standard is recommended.

Connection Using a LAN Cable

You can control this projector using a computer by connecting the projector and computer to the network (LAN).

Connection Example



NOTE:

- Use 100Base-TX (Category 5 and above) LAN cables.

Specifications of PC for Controlling this Projector

OS	Windows XP Professional SP2 Windows XP Home Edition SP2
CPU	Pentium3 1 GHz or higher
Memory	256 MB and above

NOTE:

- Make use of Internet Explorer Ver. 6.0.
- Windows® is either registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

CAUTION:

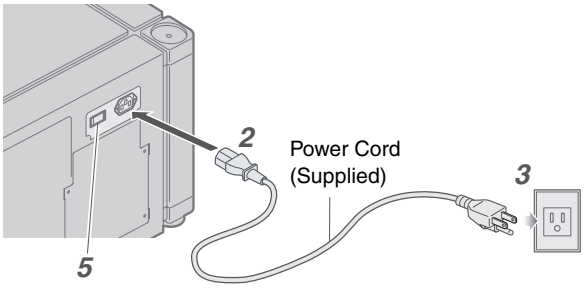
- The PC specifications above are reference values for the application software to run smoothly, and are not intended to guarantee their operation.
  Note that the applications may not run smoothly depending on the condition of use of the respective users even when the system requirements are satisfied.

Configuring the Network Settings

This sections describes the procedures when the IP address is automatically assigned by the DHCP server.

1 **Check to ensure that this projector is connected to the DHCP server via a LAN cable**

2 **Connect the supplied power cord to the power input terminal of this projector**



3 **Insert plug into the power outlet on the wall**

4 **Remove the lens cap**

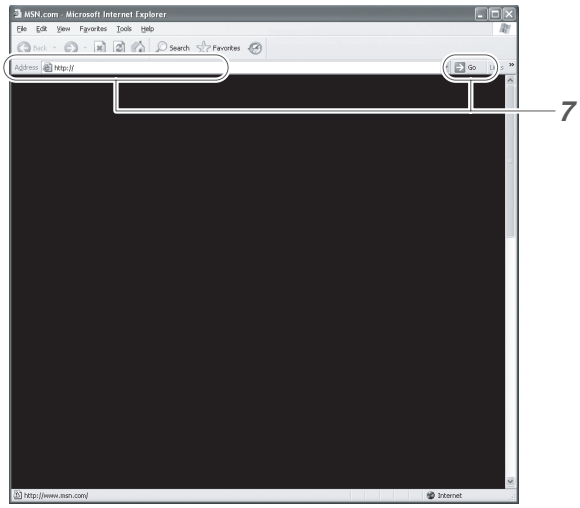
5 **Turn on the main power of the projector to set to [I]**

- The [STANDBY/ON], [LAMP], and [WARNING] indicators light up for about 45 seconds, after which the [STANDBY/ON] indicator turns red.

6 **Launch the web browser on the computer**

7 Enter the IP address assigned by the DHCP server in the address field of the web browser, and click "Go"

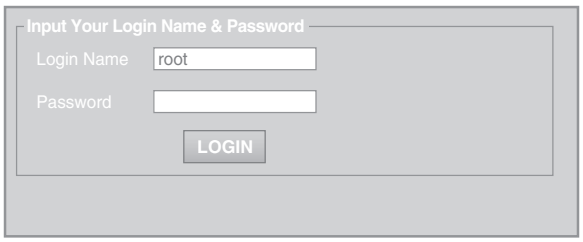
- A login screen for this projector appears.



NOTE:

- Refer to the client settings for the DHCP server to obtain information on the IP address for this unit.
- If connection is unsuccessful, this may be due to the network environment. For details, consult your network administrator.
- If an error message appears, configure the IP address manually. (☞ Page 21)

8 Enter "root" in Login Name



9 Click "LOGIN"

NOTE:

- You can alter the user name and password in the "Network" menu. Specify a user name and password of not more than eight single-byte alphanumeric characters. (☞ Page 31)
- If you have forgotten the password, please consult your authorized dealer.

■ When configuring the IP address manually or connecting this projector to the computer using a USB cable

- To configure the IP address of this projector manually, connect this projector to the computer using a USB cable to invoke the menu screen of the projector, followed by configuring the IP address.
- You need to install a driver in order to connect the projector and computer using a USB cable.

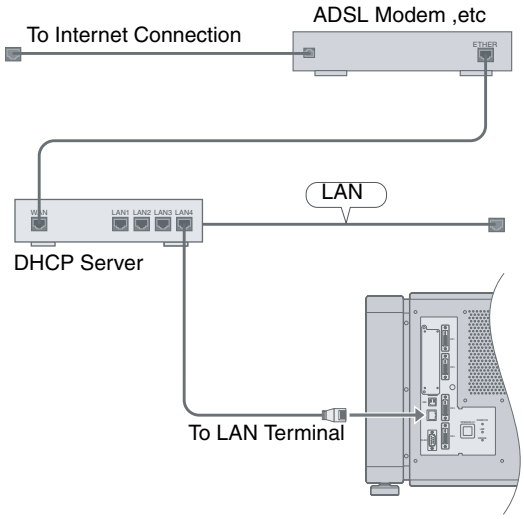
NOTE:

- For details on manual configuration of network settings and installation of the USB driver, please consult your authorized dealer.

Using the Mail Delivery Feature

This feature enables delivery of mail (error message) to the preset e-mail address when error occurs inside this projector unit.

Connection Example



Projecting Image

If setting for this projector is not completed, refer to the "Setting Menu" (☞ Page 24) upon turning on the power and configure the settings accordingly.
Once the basic settings are configured, this projector can be used by simply performing the following operation procedures.

PREPARATION:

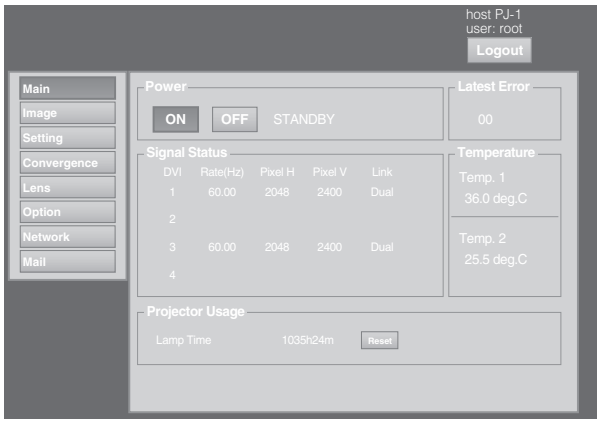
- Remove the lens cap.
- Connect this projector to the computer. (☞ Page 17, 19)
- Connect the LAN cable. (☞ Page 20)

1 Set this projector to the standby mode, and display the main menu

- Refer to "Configuring the Network Settings". (☞ Page 20)
- The [STANDBY/ON] indicator lights up in red.

2 Click the "ON" button under the "Power" item of the main menu to project the image

- The power of this projector turns on, and the projected image appears.
- The [STANDBY/ON] indicator lights up in green.

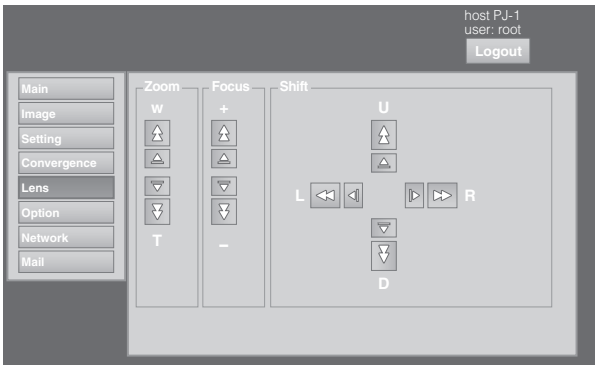


NOTE:

- You can also turn on the power by pressing the [OPERATE I/⏻] button on the projector unit for more than one second.
- The image may flicker for a few seconds immediately after projection starts. This is not a malfunction.
- After the lamp lights up, it takes about 1 minute or longer for the brightness of the video image on the screen to stabilize.

3 Adjust the zoom ratio (screen size)

You can adjust the focus using the "Zoom" item of the **Lens** menu.



- **To enlarge the screen size:**
  Press the "W" (Wide) end of "Zoom"
- **To reduce the screen size:**
  Press the "T" (Tele) end of "Zoom"

NOTE:

- The screen size changes each time you click on the inner buttons (△/▽). (Fine control)
  The outer buttons (△/▽) change the screen size when they are depressed. (Coarse control)

4 Adjust the position of the projection screen

You can adjust the focus using the "Shift" item of the **Lens** menu.

- **To shift the image upward:**
  Press the "U" end of "Shift"
- **To shift the image downward:**
  Press the "D" end of "Shift"
- **To shift the image rightward:**
  Press the "R" end of "Shift"
- **To shift the image leftward:**
  Press the "L" end of "Shift"

NOTE:

- The adjustment range for lens shift is between 0 % and ±50 % in the vertical direction, and between 0 % and ±25 % in the horizontal direction (during single-screen display).
- The position changes each time you click on the inner buttons (△/▽). (Fine control)
  The image shifts when the outer buttons (△/▽) are depressed. (Coarse control)

5 Adjust the focus

You can adjust the focus using the "Focus" item of the Lens menu.

● **To move the focus point closer:**

Press the "+" (Near) end of "Focus"

● **To move the focus point away:**

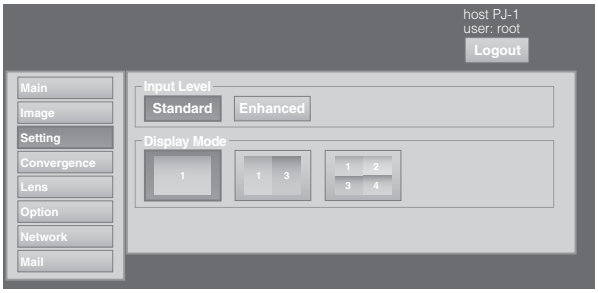
Press the " – " (Far) end of "Focus"

NOTE:

- The focus changes each time you click on the inner buttons (△/▽). (Fine control)
  The outer buttons (△/▽) change the focus when they are depressed. (Coarse control)

6 Select a screen mode for projection

You can specify the screen mode using "Display Mode" of the Setting menu. (☞ Page 27)



NOTE:

- The projected image varies according to the mode of connection. (☞ Page 17, 19)

7 Click the "OFF" button under the "Power" item of the Main menu to end the projection

- The projector switches to the cool down mode, and the [STANDBY/ON] indicator appears blinking in red.
- After exiting the cool down mode, the projector switches automatically to the standby mode, and the [STANDBY/ON] indicator lights up in red.
- You can also turn off the power by pressing the [OPERATE I/⏻] button on the projector unit for more than one second.

Cool down mode

The cool down mode is a function that cools down the lamp for an interval of about 180 seconds after projection ends.
This function is to prevent deformation and damage of the internal components of the projector due to heat from the overheated lamp. It also prevents lamp breakage and shortened lamp life.

- When the projector is in the cool down mode, the [STANDBY/ON] indicator appears blinking in red.
- Do not shut down the main power supply or unplug the power cord when in the cool down mode. Also, do not block the air inlets and vent holes. Doing so may shorten the lamp life and cause a malfunction.

8 Turn the main power at the rear of the projector unit to off [O]

- The [STANDBY/ON] indicator on the projector unit goes off.

CAUTION:

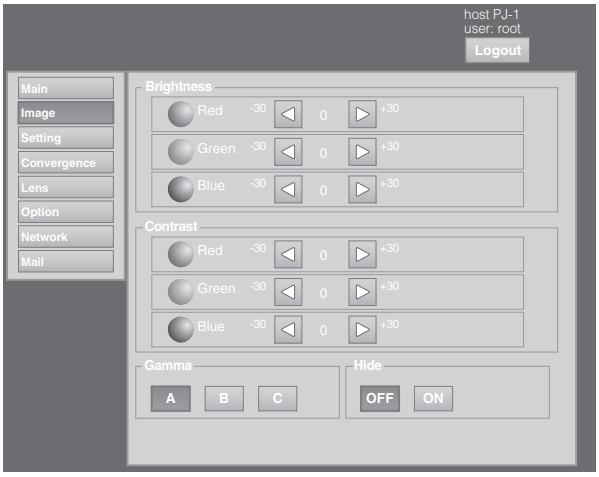
- Do not turn off the main power supply switch when in the cool down mode. Doing so may shorten the lamp life and cause a malfunction.
- Upon using, attach the lens cap to prevent soiling of the lens.
- When the projector is not to be used for a long time, disconnect the power plug.

Useful Features During Projection

■ Hiding the projected image temporarily

The projected image can be hidden by clicking the "ON" button under the "Hide" item of the Image menu.

- When the image is not displayed, pressing "OFF" under the "Hide" item to display the hidden image.



NOTE:

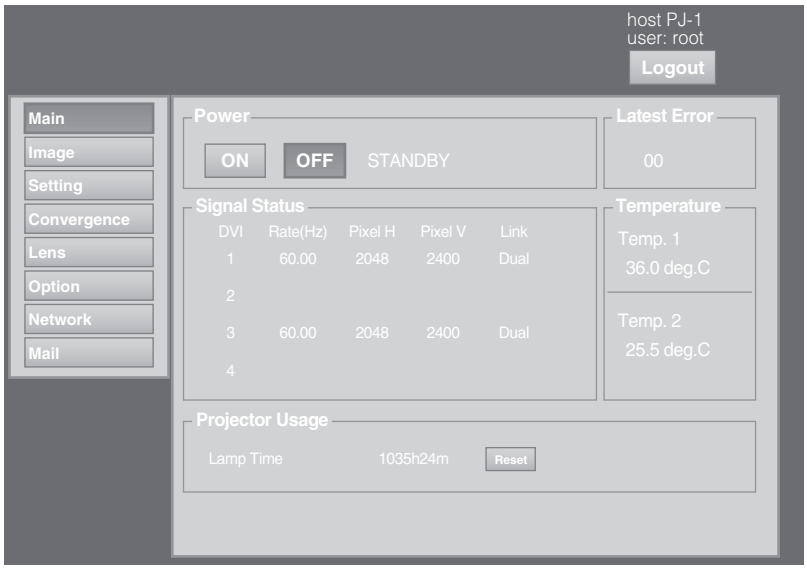
- When the image is hidden, the [STANDBY/ON] indicator appears blinking in green.

Settings Menu

After installation and connection are complete, perform the necessary adjustment and setting.
Operate the menus using the computer's browser to make adjustments and configure settings.

Main Menu

This menu displays the ON/OFF status of the power supply and information on signals input to the projector.



NOTE:

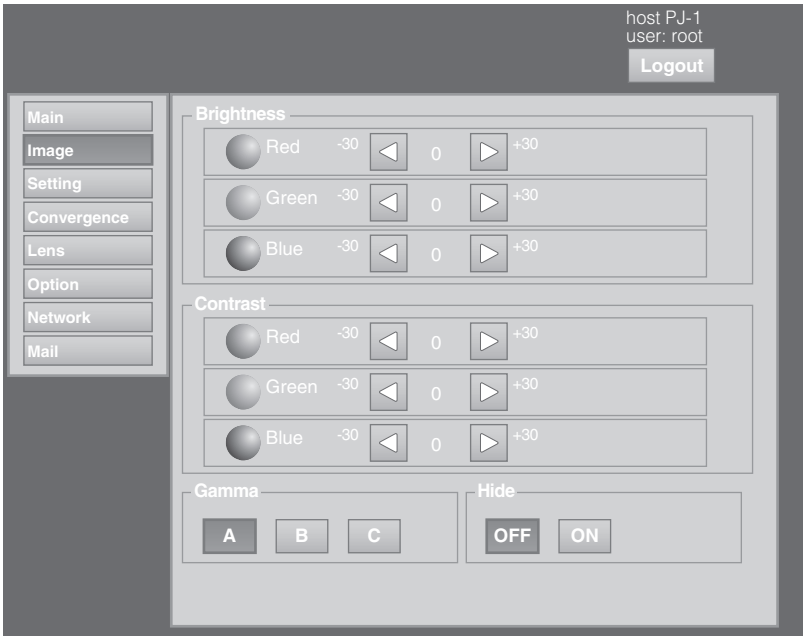
- When the power of this unit is off (main power is on), the "Main", "Image", "Setting", "Convergence", "Lens" and "Option" menus will be grayed out and will not be selectable.

Item	Setting Value	Description
Power	ON OFF	For turning the power ON/OFF. ON : Turns on the power. OFF : Turns off the power. **NOTE:** ● The following operating modes of the projector are displayed to the right of the OFF button. STANDBY : Standby (OFF) PROJECTION : Lamp Illuminated (ON) FAN ENABLE : FAN Enable (OFF→ON) LAMP ENABLE : LAMP Enable (OFF→ON) DEVICE ENABLE : Elemental Device Enable (OFF→ON) COOLING : Cooling (OFF) EMERGENCY : Error Occurred (Cooling not performed) EMERGENCY COOLING : Error Occurred (Cooling performed) ● When in the standby mode, clicking the ON button each time switches the mode in the sequence of STANDBY→DEVICE ENABLE→LAMP ENABLE→FAN ENABLE→PROJECTION. ● Clicking the **OFF** button when the power is on switches the projector to the cooling mode. The power of the projector cannot be turned on during the cooling process (180 seconds).
Latest Error	—	Displays the latest error number. Refer to "Latest Error" for information on the error number and details. (☞ Page 42)
Signal Status		Displays information on the input signals.
DVI	—	DVI : Displays the input terminal number.
Rate(Hz)	—	Rate(Hz) : Displays the vertical frequency.
Pixel H	—	Pixel H : Displays the horizontal resolution.
Pixel V	—	Pixel V : Displays the vertical resolution.
Link	—	Link : Displays the link status of the DVI terminal.
Temperature		Displays the interior temperature of the projector.
Temp. 1	—	Temp. 1 : External Temperature
Temp. 2	—	Temp. 2 : Internal Temperature
Projector Usage		Displays the time interval during which the lamp is in use.
Reset	—	**CAUTION:** ● Do not click on "Reset" unless the lamp is replaced.

Setting Menu (Cont'd)

Image Menu

This menu is used for adjusting the picture quality.

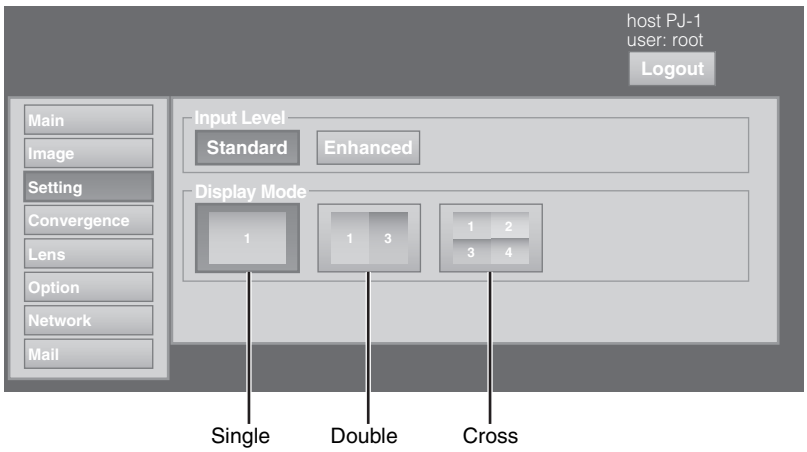


● denotes the factory default.

Item	Setting Value	Description
Brightness		For adjusting the brightness of the red, green, and blue colors.
Red	–30 to +30 (Default Value: 0)	
Green	–30 to +30 (Default Value: 0)	
Blue	–30 to +30 (Default Value: 0)	
Contrast		For adjusting the contrast of the red, green, and blue colors.
Red	–30 to +30 (Default Value: 0)	
Green	–30 to +30 (Default Value: 0)	
Blue	–30 to +30 (Default Value: 0)	
Gamma	● A B C	For specifying the tone characteristics of the image. Sets gamma to "A". Sets gamma to "B". Sets gamma to "C".
Hide	● OFF ON	Enables temporary hiding of the image. OFF : Do not hide image. ON : Hides image.

Setting Menu

This menu is used for specifying the input level of the terminal and the display mode.



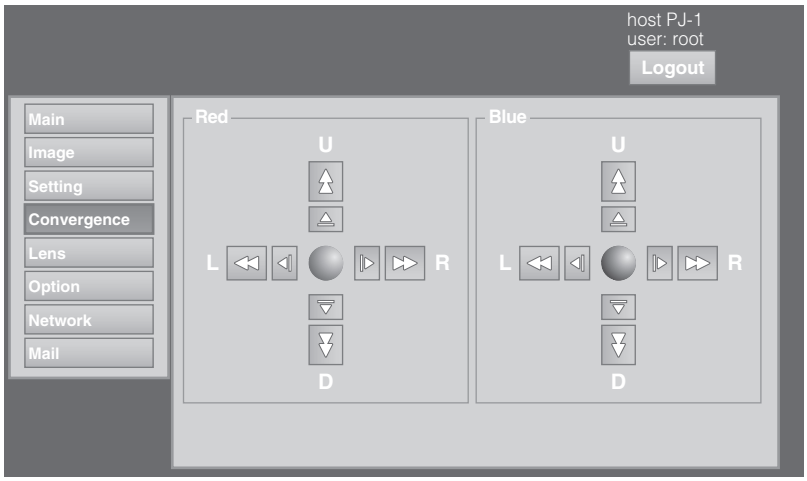
● denotes the factory default.

Item	Setting Value	Description
Input Level	● Standard Enhanced	For specifying the input level of the video signals. Standard : Set to this value under normal circumstances. (Signal level 0 - 255) Enhanced : For specifying when the signal level is between 16 and 235.
Display Mode	● Single Double Cross	For specifying the display mode of the projection screen. Single : Displays input signals on a single screen. Double : Displays two different input signals on two screens. The left screen displays images of the DVI 1 terminal, and the right screen displays images of the DVI 3 terminal. Cross Displays four different input signals on four screens. The top left screen displays images of the DVI 1 terminal, the top right screen displays images of the DVI 2 terminal, the bottom left screen displays images of the DVI 3 terminal, while the bottom right screen displays images of the DVI 4 terminal. **NOTE:** ● Please refer to "Connecting Video Signals of the Computer" for details. (☞ Page 16 - 19)

Setting Menu (Cont'd)

Convergence Menu

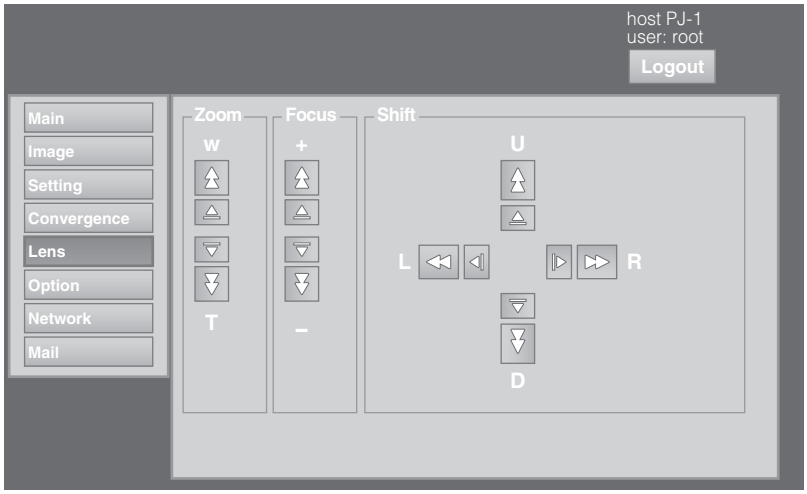
This menu is used for correcting color shifts in the optical system.



Item	Setting Value	Description
Red **Blue**	— —	For adjusting the horizontal/vertical position of red and blue colors on the image. **NOTE:** ● The green color value is fixed. ● The outer buttons are used for adjustment in units of 1/4 pixels, and the inner buttons in units of 1/10 pixels. ● When the image is flipped horizontally or vertically, the horizontal and vertical directions are reversed. ● Use images with a clear outline (such as color cross hatch patterns available in this projector (☞ Page 30)) for adjustment. **CAUTION:** ● When the movement exceeds the limit, the color of the button turns red.

Lens Menu

This menu is used for adjusting the projection lens.

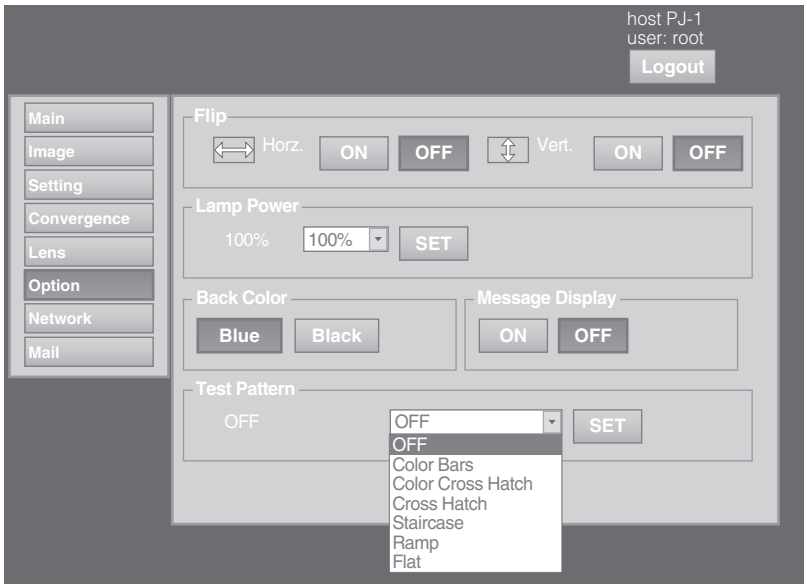


Item	Setting Value	Description
Zoom	—	For adjusting the zoom ratio (screen size). **NOTE:** ● The zoom position changes each time the inner button is clicked. The zoom position changes when the outer button is depressed.
Focus	—	For adjusting the focus position. **NOTE:** ● The focus position changes each time the inner button is clicked. The focus position changes when the outer button is depressed.
Shift	—	For adjusting the horizontal and vertical positions of the projection screen. **NOTE:** ● The shift position changes each time the inner button is clicked. The shift position changes when the outer button is depressed. **CAUTION:** ● When the movement exceeds the limit, the color of the button turns red.

Setting Menu (Cont'd)

Option Menu

This menu is used for specifying settings for flipping images and screen displays.

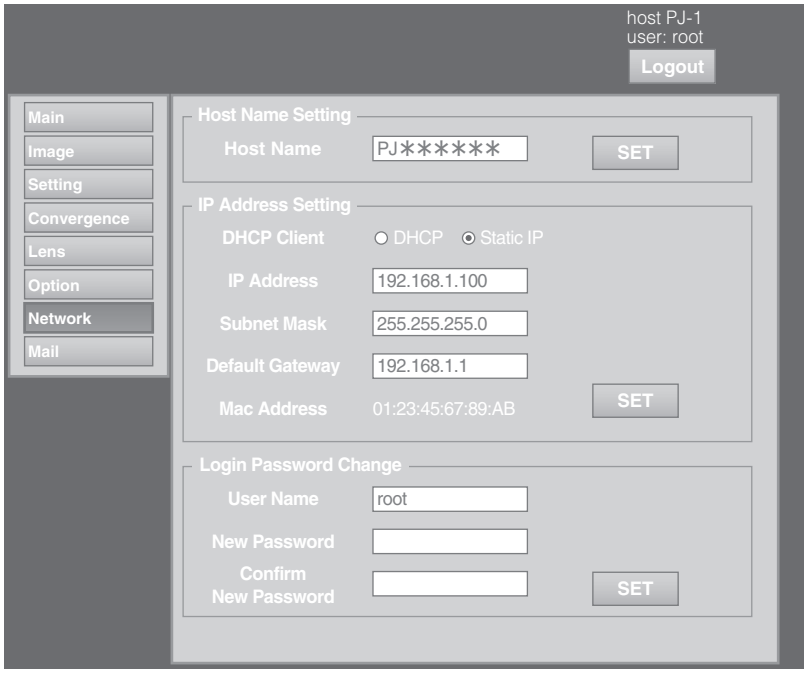


● denotes the factory default.

Item	Setting Value	Description
Flip **Horz.** **Vert.**	 ON ● OFF ON ● OFF	For specifying settings if images are vertically or horizontally flipped when they are projected from the opposite side of the screen, or when mirrors are used for projection. ON : Flips image horizontally. OFF : Do not flip image horizontally. ON : Flips image vertically. OFF : Do not flip image vertically.
Lamp Power	● 100 % | 80 %	For setting the brightness of the light source lamp. **NOTE:** ● Brightness switches in about a step of 3 % between the 80 % to 100 % range.
Back Color	● Blue Black	For specifying the background color during message display or when projection fails, such as when there is no input signal. Blue : Sets the screen to blue color. Black : Sets the screen to black color.
Message Display	● ON OFF	For specifying whether to display the message. ON : Displays message. OFF : Do not display the test pattern.
Test Pattern	● OFF Color Bars Color Cross Hatch Cross Hatch Staircase Ramp Flat	For projecting the test pattern. OFF : Do not display the test pattern. Color Bars : Displays the color bar. Color Cross Hatch : Displays the color cross hatch pattern. Cross Hatch : Displays the cross hatch pattern. Staircase : Displays the staircase. Ramp : Displays the ramp pattern. Flat : Displays the flat pattern.

Network Menu

For configuring the network settings.



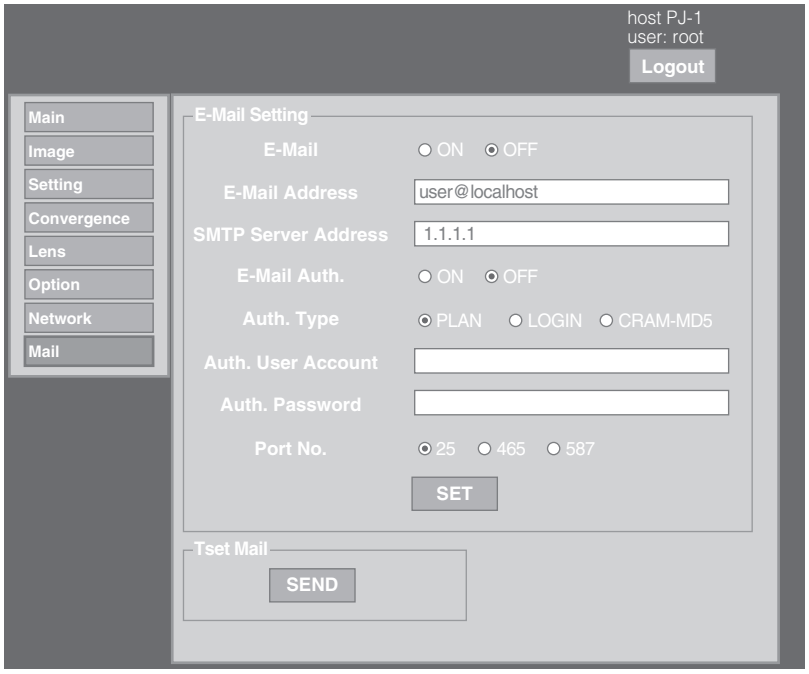
● denotes the factory default.

Item	Setting Value	Description
Host Name Setting **Host Name**	— (Default Value: PJ******)	For specifying the host name. **NOTE:** ● You can change it to a random name. Input up to 8 characters using single-byte alphanumeric characters and " - " (hyphen or minus). ● "******" displays the lower 3 bytes of the MAC address of this unit.
IP Address Setting **DHCP Client** **IP Address** **Subnet Mask** **Default Gateway** **Mac Address**	 ● DHCP Static IP — — — —	For configuring the network settings. DHCP : Select this to acquire the IP address from the DHCP server automatically. Static IP : Select this to configure the IP address manually. IP Address : Specify the IP address. Subnet Mask : Specify the subnet mask. Default Gateway : Specify the default gateway. Mac Address : Displays the MAC address. (Cannot be specified)
Login Password Change **User Name** **New Password** **Confirm New Password**	 root — —	For changing the login name and password. User Name : For changing the login name. New Password : For changing the login password. Confirm New Password : Re-enter the new password. (For confirmation) **NOTE:** ● You can change it to a random name. Specify a name up to eight single-byte alphanumeric characters and " - " (hyphen or minus). ● If you have forgotten the password, please consult your authorized dealer.

Setting Menu (Cont'd)

Mail Menu

This menu is for configuring the mail settings,
which sends out an error message to the computer of the preset address when error occurs on this projector.



■ Error message sent from this projector

(Example) When error occurs at the DD-RB board

Mail title:

4KPJ1 report mail

Message:

Error Code	32 "Trouble with DD-RB circuit board"
System Time	25 h 40 m
Lamp Time	0 h 9 m
Inside temp	31 deg.C
Outside temp	25 deg.C

NOTE:

- Refer to the code in the "Latest Error" for the error code. (☞ Page 42)

● indicates the factory default

Item	Setting Value	Description
E-Mail Setting		For configuring the e-mail feature.
E-Mail	ON ● OFF	ON : Use the mail feature. OFF : Do not use the mail feature.
E-Mail Address	— (Default Value: user@localhost)	For specifying the destination e-mail address. **NOTE:** ● Specify an address up to a maximum of 64 characters. ● Make use of single-byte alphanumeric characters, "-", ".", "_", and "@".
SMTP Server Address	— (Default Value: 1.1.1.1)	For specifying the address of the outgoing mail server. **NOTE:** ● Specify an address up to a maximum of 15 characters. ● Make use of numbers and ".".
E-Mail Auth.	ON ● OFF	ON : Enable the e-mail authentication feature. OFF : Disable the e-mail authentication feature.
Auth. Type	● PLAIN LOGIN CRAM-MD5	For configuring the e-mail authentication type. PLAIN : Set e-mail authentication to "PLAIN". LOGIN : Set e-mail authentication to "LOGIN". CRAM-MD5 : Set e-mail authentication to "CRAM-MD5".
Auth. User Account	—	For configuring the account name during e-mail authentication. **NOTE:** ● Specify an address up to a maximum of 31 characters. ● Make use of single-byte alphanumeric characters and "-".
Auth. Password	—	For configuring the password during e-mail authentication. **NOTE:** ● Specify an address up to a maximum of 31 characters. ● Make use of single-byte alphanumeric characters and "-".
Port No.	● 25 465 587	For configuring the SMTP server port number.
Test Mail	—	When the "SEND" button is clicked, the test mail with the contents configured in the E-Mail Setting will be sent.

RS-232C Interface

You can control this projector by connecting the computer to this unit using a RS-232C cross cable (D-sub 9 pins). The commands to control this unit and the response data format against the received commands are explained here.
For details, please consult your authorized dealer.

Communication Specifications

Communication specifications for this unit are as follows:

Transfer Rate	19200 bps
Data Length	8 bit
Parity	None
Stop Bit	1 bit
Flow Control	None

Command Format

■ Command Data Format (PC→Projector)

When sending a control command to this unit, use the following data format:

Header : Designates the head of data and the data type.
"!" (21h): Assigns command to the projector (Command)
"?" (3Fh): Query to the projector (Asking command)

ID : "1": Identification number of the projector (Factory setting is 1)

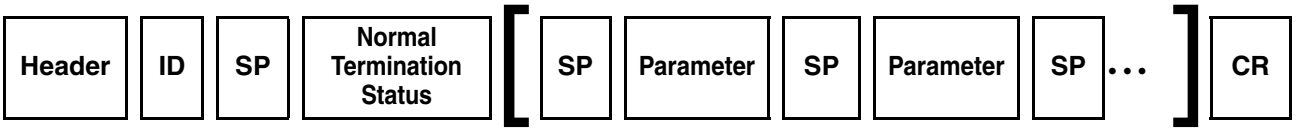
SP : Designates the delimiter between ID and command, command and parameter, as well as parameter and parameter. (20h)

CR : Designates the terminal of the data. (0Dh)

* [ ] is not necessary for Asking command.

■ Response Data Format (Projector→PC)

Upon executing a control command, this unit sends back response data to the computer in this format.



Header : Designates the head of the response data.
"@" (40h): Fetches data from the projector

ID : "1": Identification number of the projector (Factory setting is 1)

SP : Designates the delimiter between ID and normal termination status, normal termination status and parameter, as well as parameter and parameter. (20h)

Normal Termination Status : "0" (30h)

CR : Designates the terminal of the data. (0Dh)

* [ ] is not applicable when sending commands to the projector.

■ Parameters used for the data format

The following 2 types of parameters are used for command and response data:
(1) ON/OFF (2) Special Parameter
Each parameter is as follows:

(1) ON/OFF

Shows the status (ON or OFF) of the unit, such as POWER and HIDE.

Character	Hex	Meaning
0	30	OFF
1	31	ON

(2) Special parameters

Operation mode parameters

Character	Hex	Meaning
0000	30 30 30 30	Standby state
0001	30 30 30 31	Power ON state
0002	30 30 30 32	Cooling state
0003	30 30 30 33	Emergency cooling state
0004	30 30 30 34	Emergency state

DHCP client parameters

Character	Hex	Meaning
0	30	DHCP
1	31	Static IP

IP address parameters
Display the IP address using the dot (“.” (2HE)) delimiter.
Example: “192.168.0.10”

■ External control command table

Function	Command	Setting		Asking		Data Type	
		Power On	ELSE	Power On	ELSE	ON/OFF	Special Parameter
Power	U0F	✓(OFF)	✓(ON)	—	—	✓	—
Hide	U00	✓	—	✓	—	✓	—
Operation Mode	UA0	—	—	✓	✓	—	Standby...
DHCP Client	UD2	✓	✓	✓	✓	—	DHCP...
IP Address	UD3	✓	✓	✓	✓	—	192.168. ...
Network Restart	UDC	✓	✓	✓	✓	—	[0] Fixed

NOTE:

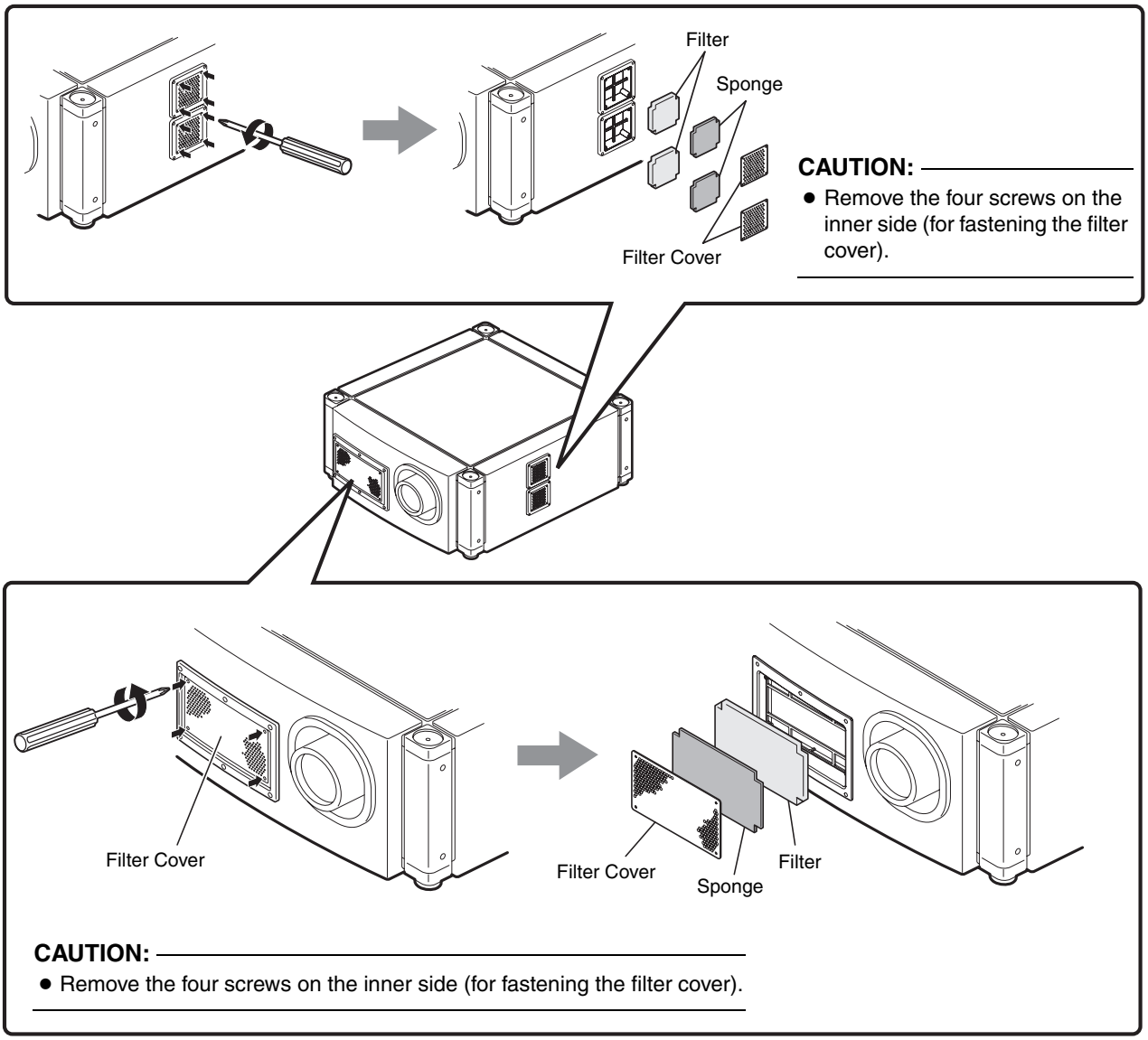
- After configuring the “DHCP Client” and “IP Address”, execute “Network Restart”.

Maintenance

Turn off the power of the projector unit, and unplug the power cord when cleaning or replacing the filter.

Cleaning and Replacing the Filter

Clean the filter regularly. If the filter is soiled, air intake efficiency may deteriorate, thus resulting in malfunction of the product.
Replace with a new one if the filter fails to remove dust thoroughly or if it is damaged.
Failure to do so may cause dust to enter the projector and shadows to appear on the projected image.
If dirt has entered this product or if you need to purchase the filter, please consult your authorized dealer.



CAUTION:

- Remove the four screws on the inner side (for fastening the filter cover).

CAUTION:

- Remove the four screws on the inner side (for fastening the filter cover).

1 Remove the filter cover

The filter is located at the front and side of the projector unit.

2 Remove the sponge and filter

Hold the center of the filter using your fingers, and pull the filter toward you to remove it.

3 Clean the sponge and filter

Remove any dirt or dust using a vacuum cleaner.

CAUTION:

- Do not clean using a flammable air duster. This may cause fire.

4 Mount the sponge and filter

Mount the filter and sponge to the projector using the reverse removed procedure.

Finally, check to ensure that the filter cover is firmly mounted.

NOTE:

- Mount the filter correctly. Failure to do so may cause the projector to malfunction.
- The projector may stop operating if a damaged filter or filter panel is used. In this case, replace the filter or filter panel with a new one.

Routine Servicing

■ Clean dirt on the cabinet

with a soft cloth. In case of heavy soiling, soak a cloth in neutral detergent diluted with water, wring dry and wipe, followed by wiping again using a dry cloth.
Pay attention to the following to prevent the cabinet from deteriorating in condition, getting damaged, or the paint from coming off.

- Do not wipe with a stiff cloth
- Do not wipe with force
- Do not wipe with thinner or benzene
- Do not spray volatile chemicals like insecticide
- Do not allow prolonged contact with rubber or plastic products

■ Remove dirt that is attached to the vent holes

using a vacuum cleaner. Wipe using a cloth if a vacuum cleaner cannot be used. Leaving dust attached may prevent adjustment of the internal temperature and result in malfunction of the projector.

■ Clean dirt on the lens

using commercial blowers or lens cleaning papers (for cleaning glasses and cameras).
Do not use fluid-type cleaning agents. This may lead to peeling of the surface coating film.
Lens surface is fragile. Avoid rubbing or knocking it.

Replacement of Light Source Lamp

The light source lamp is a consumable item. Replace with a new lamp unit if the image appears dull or if the lamp burns out.

- When the lamp needs to be replaced soon, users will be notified through a message on the screen and the indicator. (☞ Page 40, 41)
- The life of the lamp used for this projector is about 1500 hours.
  This is the average life of lamps, and not a guaranteed value.
- The lamp life may not reach 1500 hours depending on the operating conditions.
- Deterioration progresses rapidly when the remaining lamp usable time is short.
- If the image is dark or color tone abnormal, replace the lamp unit as soon as possible.
- For details on replacement of the lamp unit, please consult your authorized dealer.
- Lamp has to be replaced by an authorized person. Do not remove PANEL BACK and lamp Unit. This may cause fire and electric shock hazards. Access to the lamp unit only possible with use of tool.

Troubleshooting

Check the following points before sending this product for repair.
The following phenomena are not malfunctions.

■ If there is no abnormality on the screen when the phenomena below appear, they are not malfunctions.

- The top or front part as well as the rear of the projector unit is hot
- A creaking sound is heard from the projector
- Device noise is heard from the interior of the projector
- There is color bleeding on the screen

■ When the projector fails to run properly due to external noises, perform the following operations.

① Check to ensure that the power is shut down. Unplug the power cord, and insert again.
② Turn on the power of the projector.

■ A sound maybe heard when the lamp burn out. However, this is not a hazard.

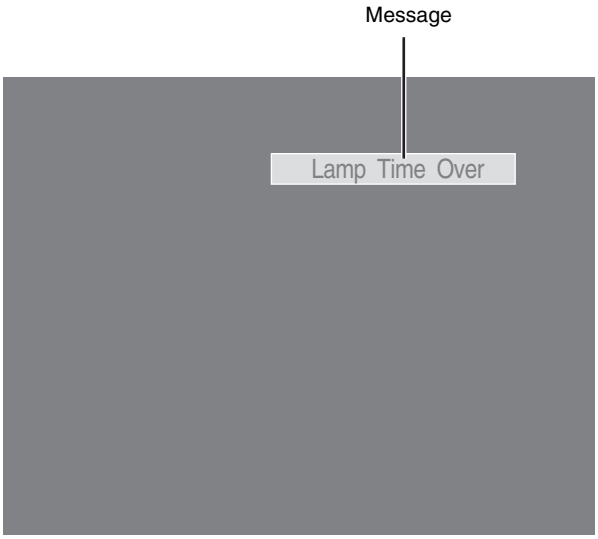
■ D-ILA devices are manufactured using extremely high-precision technology. However, some of the pixels may not lit up or remain permanently lit up.

Symptom	Probable Cause	Corrective Action	Reference Page
Power is not supplied	● Is the power cord disconnected?	● Insert the power cord (plug) properly.	☞ Page 20
	● Is the main power supply switched turned on?	● Turn on the main power supply switch of the projector unit.	☞ Page 20
	● Is the lamp in the cool down mode?	● Turn on the power again after the cool down mode ends.	☞ Page 23
	● Is the lamp protection function triggered? (This function is triggered when the power shuts down such as during power failures.)	● Wait till the temperature of the lamp has gone down. (Turn on the main power supply switch to run the fan and cool down the lamp.) Turn on the power after about 180 seconds.	—
Image is dark	● Is the lamp near exhaustion?	● Check the "Lamp Time" setting of the Main menu. When the lamp life is near its end, consult the authorized dealer from which this product is purchased or any nearby JVC servicing center.	☞ Page 24
Projector works when the power is turned on, but stops abruptly after a few minutes	● Are the air inlets and vent holes blocked?	● Turn off the main power supply switch, and remove the blockage. After removing, turn on the power again.	☞ Page 22 - 11, 23
	● Is the temperature of the room high?	● Set the temperature of the room or the surrounding temperature of this projector to an appropriate level.	☞ Page 43
	● Are the filters dirty?	● Clean the filters.	☞ Page 36
Video image does not appear	● Is the lens cap removed?	● Remove the lens cap.	☞ Page 22
	● Are devices properly connected?	● Connect the devices correctly.	☞ Page 17, 19
	● Is the power of the connected devices turned on?	● Turn on the power of the connected devices.	—
	● Are correct signals being output from the connected devices?	● Configure the connected devices correctly.	—
	● Are the signals of the connected devices possible input signals?	● Check to ensure that they are possible input signals, and input compatible signals accordingly.	☞ Page 16, 18
	● Is the image temporarily hidden?	● Set "Hide" of the Image menu to "OFF" to display the image.	☞ Page 23, 26
Video image is blur	● Is the projector out of focus?	● Adjust the focus using "Focus" of the Lens menu.	☞ Page 23, 29
	● Is the projection distance too short or too long?	● Set it to a correct distance.	☞ Page 15

Symptom	Probable Cause	Corrective Action	Reference Page
Image is unusually dark or bright	● Is the brightness level properly adjusted?	● Adjust accordingly using "Brightness" of the Image menu. ● Adjust "Ramp Power" in the Option menu.	☞ Page 26 ☞ Page 30
Coloring of the image is poor or distorted	● Is the contrast level properly adjusted?	● Adjust accordingly using "Contrast" of the Image menu.	☞ Page 26
	● Are the signals of the connected devices possible input signals?	● Check to ensure that they are possible input signals, and input compatible signals accordingly.	☞ Page 16, 18
	● Is the input cable correctly connected?	● Connect the input cable correctly.	☞ Page 17, 19
Projection position on the screen has shifted	● Has the setup position of the projector been shifted?	● Check the setup position of the projector.	—
Image disappears suddenly	● Are the video signals correctly input?	● Check the signals and connection.	☞ Page 16 - 19
Images do not appear on the two-screen mode display	● Are the DVI 1 and DVI 3 terminals connected for input?	● To display images in the two-screen mode, connect the DVI 1 and DVI 3 terminals. The left screen displays images of the DVI 1 terminal, and the right screen displays images of the DVI 3 terminal.	☞ Page 18, 19
The screen does not darken immediately when the projection has ended	● The ending process is in progress.	● Please wait for about more than 10 seconds for the ending process to complete.	☞ Page 23

What to do when these messages are displayed

Messages are displayed when the lamp life has expired and when there is input of signals that cannot be used.



Message	Cause (Details)
Lamp Time Over	● Displayed when the lamp time has exceeded 1500 hours. The message is displayed for a period of 3 minutes during each projection. → Replace with a new lamp unit. For details on replacement of the lamp unit, please consult your authorized dealer.
Out of Range	● When there is input of video signals that cannot be used with this unit → Input video signals that can be used.
No Input	● When no device is connected to the input terminal ● When the input terminal is connected but there is no signal → Input the video signals.

Warnings Using Indicators

The lamp time and warning mode are indicated using the indicator.
For details on indicator displays during normal operation, refer to “Names and Functions of Parts”. (☞ Page 10)

No.	Indicator			Description
	STANDBY/ON	LAMP	WARNING	
1	*1	Light On	—	About time to replace lamp (Lamp time has exceeded 1400 hours)
2				When the lamp life has expired (Lamp time has exceeded 1500 hours. Message displayed. (☞ Page 40))
3	*2	Blinking	Light On	When lamp does not light up and projection fails
4				When the lamp goes off during projection
5				Temperature around the lamp is high
6	*2	—	Light On	When the internal temperature is unusually high
7				When the external temperature is unusually high
8				When the cooling fan stops running
9				When error occurs in the circuit operation

*1: The indicator lights up in red when the in standby mode, and in green when in the operating mode.
*2: The indicator lights up in red when in the warning mode, and blinks in red when in the cool down mode.

■ Measures when the warning mode appears

When the projector switches to the warning mode (Nos. 3 - 9), projection stops automatically, and the cooling fan runs for about 180 seconds.
After the cooling fan stops running, turn off the main power supply switch, and remove the power plug from the outlet. Perform the following checks and take the corresponding measures.

No.	Check	Measure
3	● Check whether the projector has been subject to shock during operation.	● Turn on the power again.
4		
5	● Check whether the air inlets are blocked by objects. ● Check to ensure that the external temperature of the projector is normal.	● Allow some time for the projector to cool down.
6		
7		
8		
9		

If the warning indication is displayed again, turn off the main power supply switch after the cooling fan stops running. Then pull out the power plug from the power outlet. Call your authorized dealer for repair.

Latest Error

The latest error number appears in the Main Menu when an error occurs in the projector. Error details are as follows:

Error Number	Meaning
01	The lamp does not turn on.
02	Accumulated lamp time has exceeded 1500 hours.
06	The lamp goes off during projection.
08	Abnormal temperature in the projector.
09	Abnormal temperature around the intake vent.
0A	Abnormal temperature around the exhaust vent.
15	The lamp cover is open.
30	Trouble with CPU circuit board.
31	Trouble with MAIN circuit board.
32	Trouble with DD-RB circuit board.
33	Trouble with DD-G circuit board.
40	FAN1 (the cooling fan for DD) has stopped.
41	FAN2 (the cooling fan for the lamp) has stopped.
42	FAN3 (the cooling fan for over all exhaust) has stopped.
43	FAN4 (the cooling fan for the MAIN circuit board) has stopped.
44	FAN5 (the cooling fan for the lighting system (PCS)) has stopped.
46	FAN7 (the cooling fan for the device) has stopped.
47	FAN8 (the cooling fan for the power supply of the lamp) has stopped.
49	FAN10 (the cooling fan for DD) has stopped.
4A	FAN11 (the cooling fan for DD) has stopped.

Specifications

■ General

Power supply	AC 110 V - 120 V, AC 200 V - 240 V 50/60 Hz
Power consumption	1230 W (Standby mode: 2.7 W)
Current consumption	Max 10.9 A (AC 110 V - 120 V) Max 6 A (AC 200 V - 240 V)
Calorific power	4428 kJ/h (1058 kcal/h)
Air capacity	Intake: Approx. 3 m³/min Discharge: Approx. 3 m³/min
Allowable operating temperature range	10°C to 35°C
Allowable operating humidity range	Less than 80 % (no condensation)
Allowable storage temperature range	–5°C to 60°C
Installation height	Operation guarantee: 2000 m and below Performance guarantee: 1500 m and below
Dimensions (Width × Depth × Height)	663 mm × 827 mm × 342 - 362 mm (Excluding protrusions)
Mass	59 kg

■ Optical System

Projection method	D-ILA analog drive system × 3
D-ILA element *1, *2	1.27" (4096 × 2400 pixels) × 3 pcs (total no. of pixels: 29,491,200 pixels)
Projection lens	x1.22 power zoom lens (1.50:1 - 1.84:1)
Light-source Lamp	825 W xenon lamp
Screen size	80" to 300"
Projection distance	Approx. 2.5 m to 12 m

■ Signal System

Digital video Input format	4096 × 2400, 4096 × 2160, 3840 × 2400, 3840 × 2160, 2048 × 1200, 2048 × 1080, 1920 × 1200, 1920 × 1080, 1600 × 1200, 1280 × 1024, 1024 × 768, 800 × 600, 640 × 480
DVI clock (Rx clock)	to 165 MHz (Single) to 330 MHz (Dual)
Display resolution	4096 × 2400

■ Terminal

Video input	DVI-D (dual link) 24 pins (supports 12-bit extended input) × 4 (supports HDCP*3)
LAN	RJ45 × 1
USB	Type B (Slave) × 1
RS-232C	D-sub 9 pins (male) × 1

■ Accessories

Power cord 1

*1 D-ILA is the abbreviation for Direct drive Image Light Amplifier.

*2 D-ILA devices are manufactured using extremely high-precision technology. Pixel effectiveness is 99.99 %. Only 0.01 % or less of the pixels would either not lit up or remain permanently lit up.

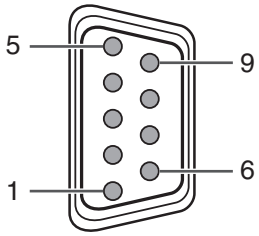
*3 HDCP is the abbreviation for High-bandwidth Digital Content Protection system. Images from the DVI input terminal may not be displayed due to HDCP specification changes.

- The open source software is embedded in this product. For more information, please go to: http://www.jvc-victor.co.jp/english/download/lnx/07jvc-pj/
- Specifications and appearance of this product may be subject to change for improvement without prior notice.
- Please note that some of the pictures and illustrations may have been abridged, enlarged or contextualized in order to aid comprehension. Images may differ from the actual product.

Specifications (Cont'd)

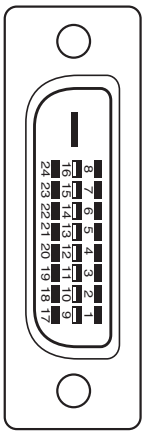
■ Pin Assignment

● RS-232C Terminal



Pin No.	Signal	Operation	Signal Direction
2	RxD	Incoming Data	This Projector ← PC
3	TxD	Outgoing Data	This Projector → PC
5	GND	Signal Ground	—
1,4,6 - 9	NC	—	—

● DVI-D Terminal



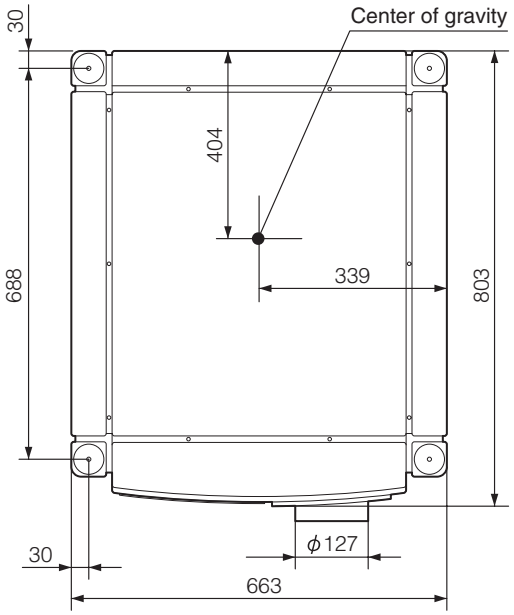
Pin No.	Signal	Pin No.	Signal
1	TMDS Data 2–	13	TMDS Data 3+
2	TMDS Data 2+	14	TMDS +5 V Power Supply
3	TMDS Data 2/4 Shield	15	Earth (+5 V)
4	TMDS Data 4–	16	Hot Plug Detection
5	TMDS Data 4+	17	TMDS Data 0–
6	DDC Clock	18	TMDS Data 0+
7	DDC Data	19	TMDS Data 0/5 Shield
8	NC	20	TMDS Data 5–
9	TMDS Data 1–	21	TMDS Data 5+
10	TMDS Data 1+	22	TMDS Clock Shield
11	TMDS Data 1/3 Shield	23	TMDS Clock +
12	TMDS Data 3–	24	TMDS Clock–

TMDS = Transition Minimized Differential Signaling
DDC = Display Data Channel

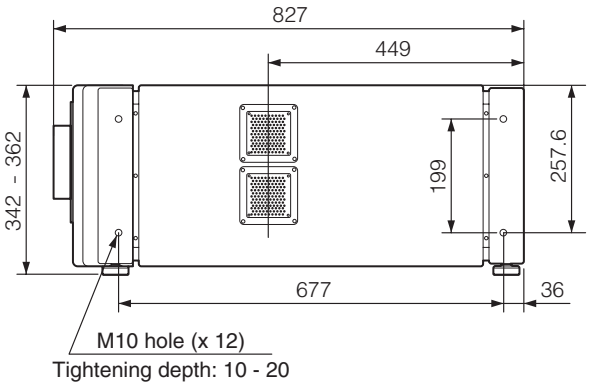
Dimensional Outline Drawing

(Unit: mm)

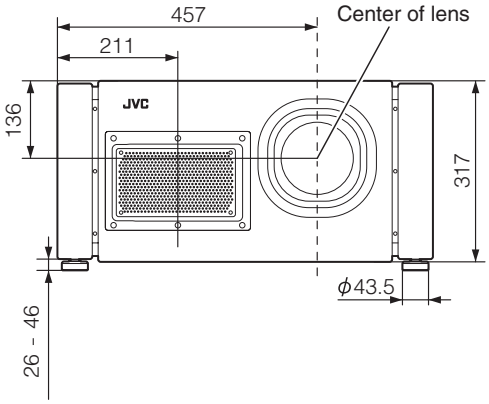
■ Top



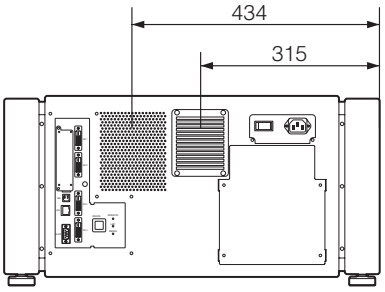
■ Side



■ Front



■ Rear



CAUTION:

- Using screws with dimensions other than those specified in the above diagram may cause the projector to drop or malfunction.

Notes

DLA-SH4K

D-ILA® PROJECTOR

JVC

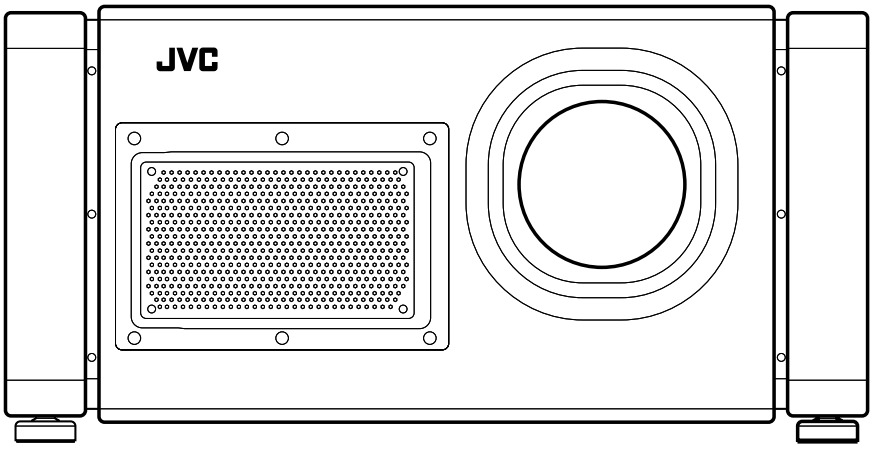
© 2008 Victor Company of Japan, Limited

Printed in Japan
0108TTH-SW-VP

JVC

D-ILA® PROJECTOR

DLA-SH4KNL INSTRUCTIONS



(lens is optional)

Thank you for purchasing this JVC product.

Please study this instruction manual carefully before starting to operate the unit, in order to use the unit correctly. We take no responsibility for any problems resulting from misuse of this unit by operating this equipment other than instructed in this manual.

For Customer use :

Enter below the serial No. which is located on the bottom side of the cabinet. Retain this information for future reference.

Model No.	DLA-SH4KNL
Serial No.	

LCT2370-002A

Safety Precautions

IMPORTANT INFORMATION

WARNING:
TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

WARNING:
THIS APPARATUS MUST BE EARTHED.

CAUTION:
To reduce the risk of electric shock, do not remove cover. Refer servicing to qualified service personnel.

This projector is equipped with a 3-blade grounding type plug to satisfy FCC rule. If you are unable to insert the plug into the outlet, contact your electrician.

FCC INFORMATION (U.S.A. only)

CAUTION:
Changes or modification not approved by JVC could void the user's authority to operate the equipment.

NOTE:
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

MACHINE NOISE INFORMATION (Germany only)
Changes Machine Noise Information Ordinance 3. GSGV, January 18, 1991: The sound pressure level at the operator position is equal or less than 70 dB (A) according to ISO 7779.

About the installation place

Do not install the projector in a place that cannot support its weight securely.

If the installation place is not sturdy enough, the projector could fall or overturn, possibly causing personal injury.

IMPORTANT SAFEGUARDS

Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. But IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD. In order not to defeat the safeguards incorporated into this product, observe the following basic rules for its installation, use and service. Please read these Important Safeguards carefully before use.

- All the safety and operating instructions should be read before the product is operated.
- The safety and operating instructions should be retained for future reference.
- All warnings on the product and in the operating instructions should be adhered to.
- All operating instructions should be followed.
- Place the projector near a wall outlet where the plug can be easily unplugged.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use attachments not recommended by the product manufacturer as they may be hazardous.
- Do not use this product near water. Do not use immediately after moving from a low temperature to high temperature, as this causes condensation, which may result in fire, electric shock, or other hazards.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. The product should be mounted according to the manufacturer's instructions, and should use a mount recommended by the manufacturer.
- When the product is used on a cart, care should be taken to avoid quick stops, excessive force, and uneven surfaces which may cause the product and cart to overturn, damaging equipment or causing possible injury to the operator.

PORTABLE CART WARNING
(symbol provided by RETAC)

S3126A

- Slots and openings in the cabinet are provided for ventilation. These ensure reliable operation of the product and protect it from overheating. These openings must not be blocked or covered. (The openings should never be blocked by placing the product on bed, sofa, rug, or similar surface. It should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.) For proper ventilation, separate the product from other equipment, which may prevent ventilation and keep a distance (See page 11).
- This product should be operated only with the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.
- This product is equipped with a three-wire plug. This plug will fit only into a grounded power outlet. If you are unable to insert the plug into the outlet, contact your electrician to install the proper outlet. Do not defeat the safety purpose of the grounded plug.

– The lens for this product is optional. Do not attach the power cord when the lens is not attached. Turning on the power when no lens is attached may result in fire, electric shock, or other hazards.
– Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at doors, plugs, receptacles, and the point where they exit from the product.
– For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power line surges.
– Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.
– Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
– Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages and other hazards. Refer all service to qualified service personnel.
– Unplug this product from the wall outlet and refer service to qualified service personnel under the following conditions:
  a) When the power supply cord or plug is damaged.
  b) If liquid has been spilled, or objects have fallen on the product.
  c) If the product has been exposed to rain or water.
  d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the Operation Manual, as an improper adjustment of controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  e) If the product has been dropped or damaged in any way.
  f) When the product exhibits a distinct change in performance - this indicates a need for service.
– When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or with same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
– Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
– The product should be placed more than one foot away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.
– When connecting other products such as VCR's, and DVD players, you should turn off the power of this product for protection against electric shock.
– Do not place combustibles behind the cooling fan. For example, cloth, paper, matches, aerosol cans or gas lighters that present special hazards when over heated.
– Do not look into the projection lens while the illumination lamp is turned on. Exposure of your eyes to the strong light can result in impaired eyesight.
– Do not look into the inside of this unit through vents (ventilation holes), etc. Do not look at the illumination lamp directly by opening the cabinet while the illumination lamp is turned on. The illumination lamp also contains ultraviolet rays and the light is so powerful that your eyesight can be impaired.
– Do not drop, hit, or damage the light-source lamp (lamp unit) in any way. It may cause the light-source lamp to break and lead to injuries. Do not use a damaged light source lamp. If the light-source lamp is broken, ask your dealer to repair it. Fragments from a broken light-source lamp may cause injuries.
– The light-source lamp used in this projector is a high pressure lamp. Be careful when disposing of the lightsource lamp. If anything is unclear, please consult your dealer.
– Do not ceiling-mount the projector to a place which tends to vibrate; otherwise, the attaching fixture of the projector could be broken by the vibration, possibly causing it to fall or overturn, which could lead to personal injury.
– Use only the accessory cord designed for this product to prevent shock.

***DO NOT allow any unqualified person to install the unit.**

Be sure to ask your dealer to install the unit (e.g. attaching it to the ceiling) since special technical knowledge and skills are required for installation. If installation is performed by an unqualified person, it may cause personal injury or electrical shock.

Safety Precautions (Cont'd)

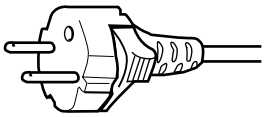
POWER CONNECTION

The power supply voltage rating of this product is AC110 V to 120 V, AC200 V to 240 V, the power cord attached conforms to the following power supply voltage. Use only the power cord designated by our dealer to ensure Safety and EMC.

When it is used by other power supply voltage, power cable must be changed.

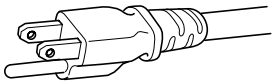
Ensure that the power cable used for the projector is the correct type for the AC outlet in your country. Consult your product dealer.

Power cord



For European continent countries:
AC200 V to 240 V
(3.3 m)

Power cord



Power supply voltage:
AC110 V to 120 V
(3.3 m)

WARNING:

Do not cut off the main plug from this equipment.

If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or adapter or consult your dealer.
If nonetheless the mains plug is cut off, dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the main supply. If a new main plug has to be fitted, then follow the instruction given below.

WARNING:
THIS APPARATUS MUST BE EARTHED.

IMPORTANT:
The wires in the mains lead on this product are colored in accordance with the following cord:
Green-and-yellow : Earth
Blue : Neutral
Brown : Live
As these colors may not correspond with the colored making identifying the terminals in your plug, proceed as follows:
The wire which is colored green-and-yellow must be connected to the terminal which is marked ⏚ with the letter E or the safety earth or colored green or green-and-yellow.
The wire which is colored blue must be connected to the terminal which is marked with the letter N or colored black.
The wire which is colored brown must be connected to the terminal which is marked with the letter L or colored red.

EMC Supplement

– This equipment is in conformity with the provisions and protection requirements of the corresponding European Directives.
This equipment is designed for professional projector appliances and can be used in the following environments.
- Controlled EMC environment (for example purpose built broadcasting or recording studio), and the rural outdoors environment (far away from railways, transmitters, overhead power lines, etc).

In order to keep the best performance and furthermore for electromagnetic compatibility we recommend to use the cables not exceeding the following length:

Cables		Length
Power cord	Power supply cord	3.3 m
DVI (X4) Cable	Shielded cable	5.0 m
USB Cable	Shielded cable	2.0 m
LAN Cable	Shielded cable	2.0 m
RS-232C Cable	Shielded cable	1.6 m

- The inrush current of this apparatus is 9.705 amperes.

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

In case where the strong electromagnetic waves or magnetism are near the signal cable, the picture will contain noise. In such cases, please keep the cable away from the sources of the disturbance.

Dear Customer,

This apparatus is in conformance with the valid European directives and standards regarding electromagnetic compatibility and electrical safety.

European representative of Victor Company of Japan, Limited is:
JVC Technical Services Europe GmbH
Postfach 10 05 04
61145 Friedberg
Germany

Contents

Getting Started

Safety Precautions 2
Features 7
Check the Accessories/Optional Accessories 8
How to Read this Manual 8
Precautions During Use 9
Names and Functions of Parts 10

Connection and Installation

Installation 12
Optional projection lens 12
Minimum Space Required 12
Projector Installation Angle 13
Installing the Projector and Screen 13
Screen Size and Projection Distance 16
Connecting Video Signals of the Computer 18
Connection During Single-Screen Mode Display . . . 18
Connection During Two-Screen/
Four-Screen Mode Display 20

Network Settings

Connection Using a LAN Cable 22
Connection Example 22
Specifications of PC for Controlling
this Projector 22
Turning On the Main Power 23
IP Address Settings 24
Assigning a static IP address 24
Assigning IP Address from the DHCP Server 27
Using the Mail Delivery Feature 27
Connection Example
(When DHCP Server is Used) 27

Operation and Settings

Projecting Image 28
Useful Features During Projection 29
Main Menu 30
Image Menu 32
Setting Menu 33
Convergence Menu 34
Lens Menu 35
Option Menu 36
Network Menu 37
Mail Menu 38
RS-232C Interface 40
Communication Specifications 40
Command Format 40

Others

Maintenance 42
Cleaning and Replacing the Filter 42
Routine Servicing 43
Replacement of Light Source Lamp 43
Troubleshooting 44
What to do when these messages are displayed . . . 46
Warnings Using Indicators 47
Latest Error 48
Specifications 49
Dimensional Outline Drawing 51

Features

Ultra-high resolution, high contrast, and high quality projector

■ Ultra-high resolution of 4096×2400

This projector comes with a newly developed 1.27" and 4096×2400 pixel D-ILA (Direct-drive Image Light Amplifier) device, and achieves an ultra-high resolution of 9.83 million pixels, which is four times that of full HD.

■ High contract ratio of 10,000:1

A high contrast ratio of 10,000:1 (native) is achieved through combining the D-ILA device with WireGrid (inorganic reflective polarizing plate) that is employed in the new optical engine.

High flexible installation

■ Design is compact and light, and enables stacking

- This product is about 65 % the size of existing JVC projectors of the same class, and its weight is as light as 56 kg (excluding lens).
- Stackable design enhances installation for special applications (e.g. 3D).

■ Vertical/Horizontal lens shift

This projector enables not only vertical, but also horizontal lens shift, which enables a larger degree of flexibility in the layout.

- Zoom lens : vertical ±50%, horizontal ±25%
- Short focal length lens : vertical ±15%, horizontal ±5%

■ Inclined installation

This product can be installed at a tilt angle of up to ±90°, which provides greater flexibility in the location of the projection screen.

■ Low power consumption

This product helps to save power with a consumption of not more than 1.5 kW.

User-friendly interface and high operability

■ Equipped with DVI (Dual-Link)×4 input terminals

■ Network-supported

- In addition to the conventional RS-232C, it also provide support for connection using Ethernet. You can make adjustments or configure settings from the web browser on the PC without having to install any special software.
- Network connection enables you to make perform adjustment or configure settings for multiple projectors using a single PC.
- The Email feature enables you to send reports on the lamp replacement timing or error messages to a remote location.

■ Comes with various built-in test patterns (six types including Cross Hatch, Color Bars, etc.)

Enables image adjustment without the need of external signal sources.

Features that enable flexible display and expression

■ Supports multi screens (single screen, two-screen, and four-screen modes)

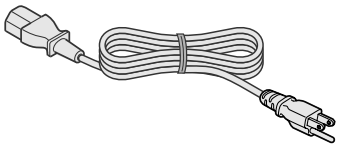
■ Comes with three types of built-in gamma tables. Enables configuration of gradation expression settings according to the video image

Check the Accessories/ Optional Accessories

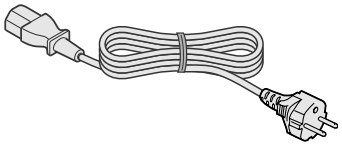
Accessories

■ Power Cord

For the US market (3.3 m x 1)



For the EU market (3.3 m x 1)



- Other items include the instruction manual and other printed materials.

Accessories (Sold Separately)

■ Projection lens

GL-MS4015SZG
- 1.50:1 to 1.84:1 1.22x zoom lens (80" to 300")

GL-MS4011SG
- 1:1.1 Short focal length lens (50" to 250")

■ Replacement filter/sponge (front)

LC43009-001A (Filter)
LC43030-001A (Sponge)

■ Replacement filter/sponge (right side)

LC43009-002A (Filter)
LC43030-002A (Sponge)

How to Read this Manual

How to Read this Manual

■ Symbols used in this manual

CAUTION : Describes precautions to note when operating this product.

NOTE : Describes reference information, such as functions and restrictions during use.

☞ : Indicates the page or section to refer to.

■ Content of this manual

- Personal computers or computers are expressed as computers or PCs in this manual.
- Contents of this manual are the copyright of JVC. All rights reserved. Unauthorized reproduction and duplication of this manual, in whole or in part, without the permission of JVC is strictly prohibited.
- The names of other companies' products that appear in this manual are the trademark or registered trademark of the respective companies. Symbols such as ™, ®, and © are omitted in this manual.
- Designs, specifications, and other details described in this manual may be modified for improvement without prior notice.

Precautions During Use

Burning-in of D-ILA Device

■Do not allow the same still picture to be projected for a long time or an abnormally bright video image to be projected

Do not project still images with a high brightness or high contrast on the screen for a long time. This video image could be burnt into the D-ILA device.

Pay special attention when projecting video games and computer program images.
Motion images such as normal video playback images do not pose the burning-in problem.

Viewing Conditions (Brightness of Room)

■Brightness of the room

Avoid direct exposure of screen to direct sunlight and lights such as by using a curtain. Images can be well projected by darkening the brightness of the room.

■Do not view screen for prolonged hours

Looking at the screen continually for a prolonged time is tiring to the eyes. Allow your eyes to rest at intervals.

■Do not use this unit when image flickers

Image may flicker due to installation conditions and environment. This may cause your eyesight to deteriorate.

Environment of Use

■Do not use this projector in rooms with cigarette smoke or oily smoke

Do not use this projector in rooms with cigarette smoke or oily smoke. This may cause the unit to malfunction.

■When mounting this projector to the ceiling

Check the temperature around the projector unit. When a heater is in use, the ceiling may reach a temperature higher than anticipated, hence leading to malfunction of the unit.

Maintenance Procedures

■Clean dirt on the cabinet

Do this with a soft cloth. In case of heavy soiling, soak a cloth in neutral detergent diluted with water, wring dry and wipe, followed by wiping again using a dry cloth.

■Pay attention to the following to prevent the cabinet from deteriorating in condition, getting damaged, or the paint from coming off.

- Do not wipe with a stiff cloth
- Do not wipe with force
- Do not wipe with thinner or benzene
- Do not spray volatile chemicals like insecticide
- Do not allow prolonged contact with rubber or plastic products

■Clean dirt on the lens

Do this using commercial blowers or lens cleaning papers (for cleaning glasses and cameras).

Do not use fluid-type cleaning agents. This may lead to peeling of the surface coating film.

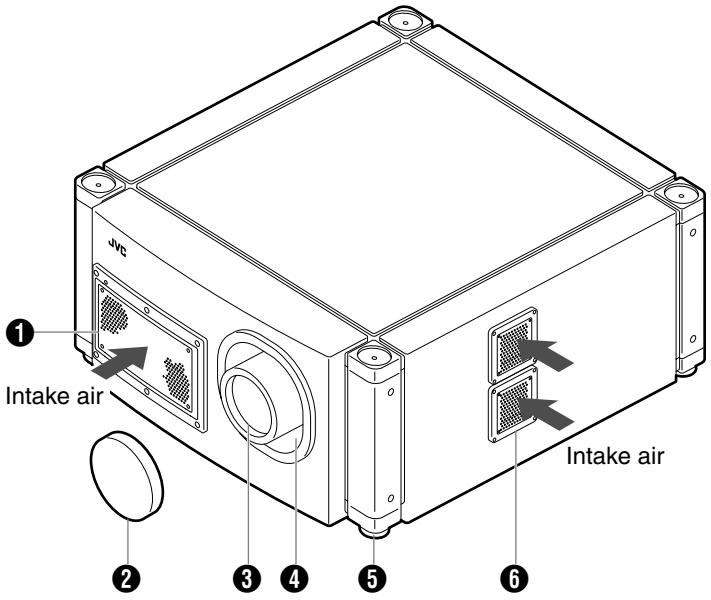
Lens surface is fragile. Avoid rubbing it hard or knocking it.

Gauging replacement time of components

This product comes with replacement components required for maintaining the functions of this product, such as optical components, cooling fan and filters. The timing for replacing components varies considerably according to the frequency and environment of use. For details on replacement of components (except filters), please consult any nearby JVC servicing center.

Names and Functions of Parts

Front/Right Side



❶ Air Inlet/Filter

The air inlets absorb air to cool the interior of the projector. A filter is mounted inside the projector to remove dirt in the air that enters through the inlets. Clean the filter regularly. (☞ Page 42)

CAUTION:

- Do not block the air inlets with papers, cloth, or soft cushions. Doing so may cause heat to trap inside the projector and result in fire or malfunction.

❷ Lens Cap (included with the optional lens)

Fit the cap on the lens when this projector is not in use to prevent the lens from becoming dirty.

CAUTION:

- Do not project images with the lens cap attached. The lens cap may be deformed due to the heat, or the projector may malfunction.

❸ Projection Lens (optional)

Zoom lens or short focal length lens is optional.
(☞ Page 8)
Remove the lens cap before projection.

❹ Lens Mounting Bracket

Mount the optional projection lens.

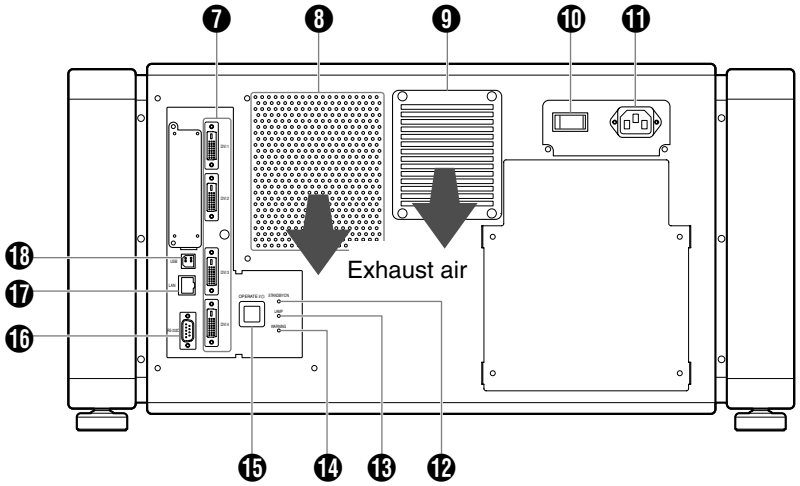
❺ Adjustable Feet (x 4)

Adjust the feet until the projector is level. The adjustable range is 20 mm for each. (☞ Page 13)

❻ Air Inlet/Filter

The air inlets absorb air to cool the interior of the projector. A filter is mounted inside the projector to remove dirt in the air that enters through the inlets. Clean the filter regularly. (☞ Page 42)

Rear



❼ [DVI 1 to 4] Terminal

This is an input terminal for video signals. Connect it to the video output terminal of the computer.
(☞ Page 19, 21)

❽ Vent Hole

Warm air exits from the hole after cooling the projector.

CAUTION:

- Do not block the vent holes with papers, cloth, or soft cushions. Doing so may cause heat to trap inside the projector and result in fire or malfunction.

❾ Vent Hole (For Lamp)

Warm air exits from the hole after cooling the lamp.

❿ Main Power Supply Switch

Use this to turn ON/OFF the main power supply of the projector unit.

⓫ AC Power Input Terminal

Connect the supplied cord to this terminal.

⓬ [STANDBY/ON] Indicator

Lit (Red)	: When in the standby mode.
Lit (Green)	: When power is supplied.
Blinking (Red)	: When cooling down (cool down mode). (☞ Page 29)
Blinking (Green)	: When the projected image is temporarily hidden. (☞ Page 29)

NOTE:

- For details on indicator displays during warnings, refer to “Warnings Using Indicators”. (☞ Page 47)

⓭ [LAMP] Indicator

This indicator lights up in yellow when the lamp time exceeds 1400 hours.

NOTE:

- For details on indicator displays during warnings, refer to “Warnings Using Indicators”. (☞ Page 47)
- A lamp life message appears when the lamp time has exceeded 1500 hours. (☞ Page 46)

⓮ [WARNING] Indicator

This indicator lights up in red when abnormality occurs on this projector. For details, refer to “Warnings Using Indicators”. (☞ Page 47)

⓯ [OPERATE I/⏻] Button

Pressing this button for one second or longer when in the standby mode (main power supply is ON) turns on the power of the projector unit. Pressing it for one second or longer when the power is ON switches the projector to the standby mode.

⓰ [RS-232C] Terminal

This is the RS-232C interface-specific terminal. This projector can be controlled by connecting it to a computer using a RS-232C cable.

⓱ [LAN] Terminal

Enables control of this projector using a computer that is connected to the network.

⓲ [USB] Terminal

Enables control of this projector by connecting it to a computer.

Installation

Please read the following carefully when installing this unit.

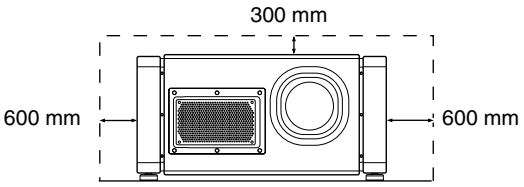
Optional projection lens

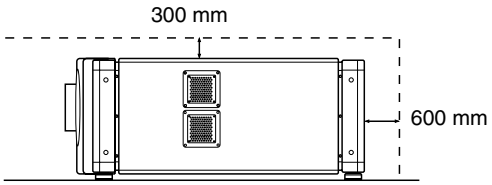
Mount the optional projection lens (☞ Page 8). For details on mounting the lens, please consult your authorized dealer.

Minimum Space Required

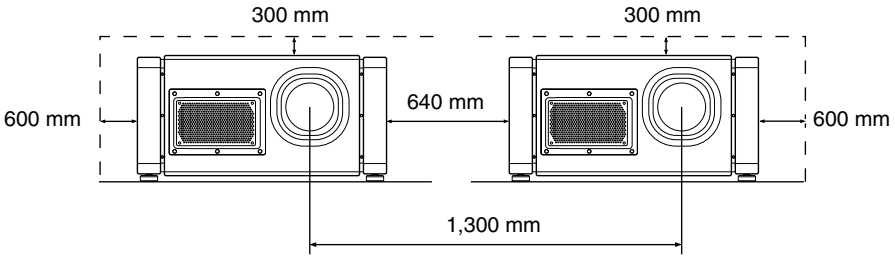
Do not use a cover that may enclose this unit or block the air inlets/vent holes. Allow sufficient space around this unit. When this unit is enclosed in a space with dimensions as indicated below, ventilate accordingly so that the internal and external temperatures are the same.

■ When using one set of projector

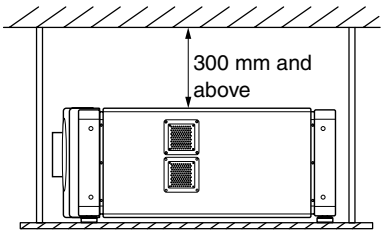




■ When using two sets of projectors side by side



■ When the projector is suspended



NOTE:

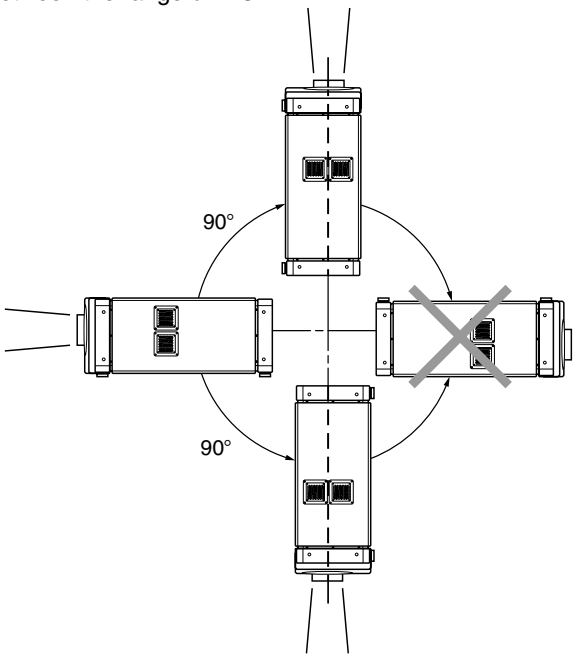
- To prevent the projector from falling or toppling, it is recommended that the holder be fastened to the unit using bolts.
- To mount the projector to the ceiling, mount a special shelf to the ceiling, followed by installing the unit on the shelf. For safety and maintenance purposes, equipment that eases adjustment to a suitable height for maintenance is required.

CAUTION:

- Special expertise and techniques are required for mounting this unit. Be sure to ask your dealer or a specialist to perform mounting.

Projector Installation Angle

You can install this projector between ±90°.
Images will be properly displayed if the horizontal angle is between the range of ±5°.

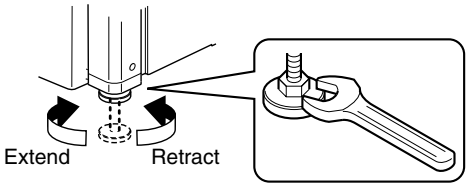


CAUTION:

- To ceiling-mount this unit, special expertise and skills are necessary. Make to sure request the authorized dealer or specialized work contractors for installation.
- The projector cannot be installed upside down.

■ Adjusting the Inclination

Adjust the horizontal angle of the projector.
Lift the projector and turn the nut of the adjustable foot with a spanner in the direction indicated by the arrow to extend or retract the foot. The adjustable range is 20 mm.

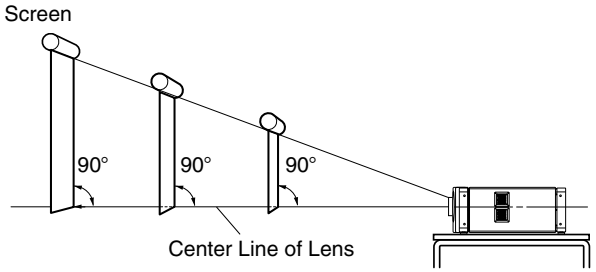


Installing the Projector and Screen

It is recommended that this projector be installed at right angle to the screen.
When a zoom lens (optional) is in use, you can make use of the lens shift feature of this projector to shift the projection screen vertically between 0% to ±50%, and horizontally between 0% to ±25%.
When a short focal length lens (optional) is in use, you can shift the projection screen position vertically between 0% to ±15%, and horizontally between 0% to ±5%.
Below are some examples on the layout when a zoom lens is used.

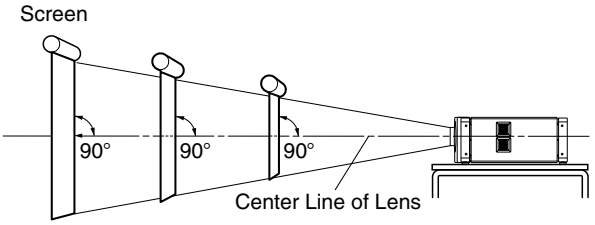
■ When shift amount in the upward direction is +50 %

Install the projector such that the lower end of the projection screen is at the same height as the center of the lens.



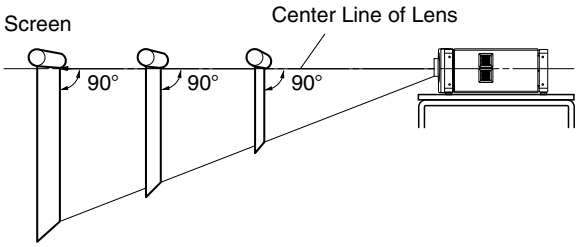
■ When shift amount in the upward/downward direction is 0 %

Install the projector such that the center of the projection screen is at the same height as the center of the lens.



■ When shift amount in the downward direction is –50 %

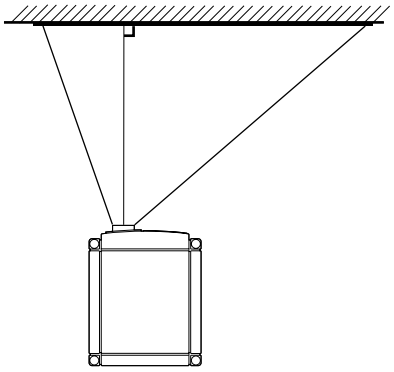
Install the projector such that the upper end of the projection screen is at the same height as the center of the lens.



Installing the Projector and Screen (Cont'd)

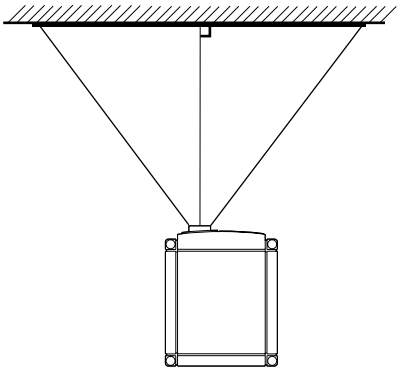
■ When shift amount in the right direction is +25 %

Install the projector such that the center of the lens is aligned with the 1/4 position from the left edge of the screen.



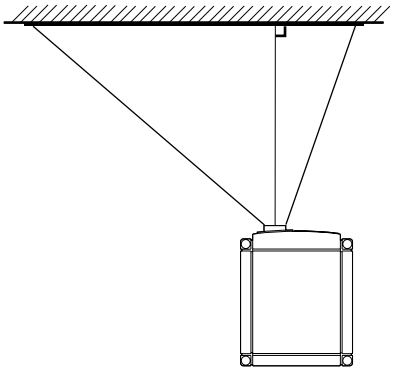
■ When shift amount in the left/right direction is 0 %

Install the projector such that the center of the lens is aligned with the center of the screen.



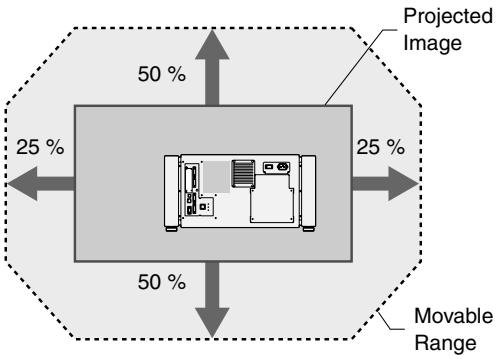
■ When shift amount in the left direction is –25 %

Install the projector such that the center of the lens is aligned with the 1/4 position from the right edge of the screen.

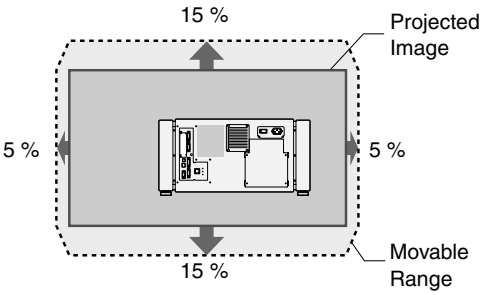


■ Movable Range of Projected Image

● **GL-MS4015SZG Zoom lens**



● **GL-MS4011SG Short focal length lens**



NOTE:

- When using the lens shift feature, do not exceed the range (shift amount) as shown above. If the shift amount exceeds the range as shown, shadows will appear on the projected image.

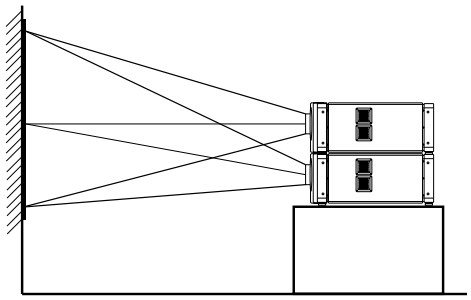
Lens Fixation Mechanism

A screw for securing the lens mechanism is attached in the factory shipment to prevent damage of the equipment during transportation. If the lens does not move horizontally or vertically when you operate "Shift" in the Lens menu, this could be because the screw has not been removed. When this occurs, please consult your authorized dealer.

■ Overlaying projected images (when zoom lens is in use)

● Projecting images by stacking projectors

The lens shift feature enables you to use up to three stacked projectors at the same time.
Stacking projectors enhances the brightness level, and helps to project images that are sufficiently bright even when the venue is relatively big or bright.

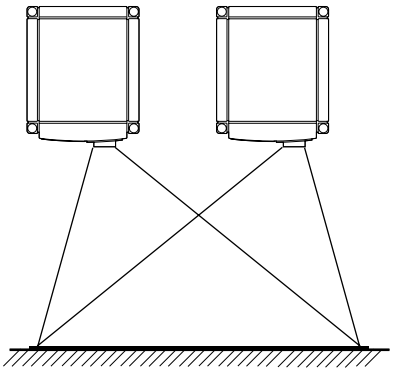


CAUTION:

- When the projectors are stacked together during use, ensure that the installation site is sufficiently strong and there is proper air cooling around the projectors.
  Take the necessary measures to prevent the projectors from toppling or falling off so as to ensure safety during emergency situations, such as earthquakes, and to prevent accidents from occurring. For details, please consult your authorized dealer.

● Projecting images by arranging projectors side by side

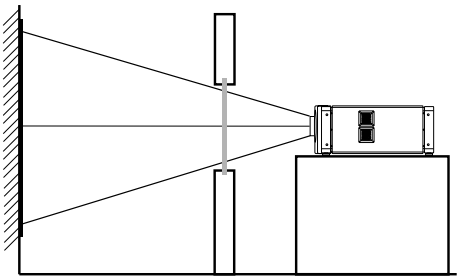
The lens shift feature enables you to use up to two projectors that are arranged side by side.
Arranging two projectors side by side enhances the brightness level, and helps to project images that are sufficiently bright even when the venue is relatively big or bright.
When projecting images by arranging the projectors side by side, adjust the shift amount of both projectors accordingly to superimpose the images.



NOTE:

- When using the projectors by arranging them side by side, ensure that the installation site is sufficiently strong and there is proper air cooling around the projectors. For details, please consult your authorized dealer. (☞ Page 12)

■ When light passes through the glass of projection booth



NOTE:

- When light passes through the glass, the quantity of light decreases. Make sure that the glass of the projection booth is not more than one piece.
- Do not use glass if possible.
- When projecting light on an inclined glass surface, adjust the glass angle as well as installation angle of this unit accordingly to prevent impact on the image due to diffuse reflection.

Installing the Projector and Screen (Cont'd)

Screen Size and Projection Distance

Adjust the distance from the lens to the screen to achieve your desired screen size.

■ **GL-MS4015SZG Zoom lens**

Projection Screen Size (Diagonal Length)	Image Width	Projection distance	
		Tele End	Wide End
80" (Approx. 2.03 m)	1.75 m	3.19 m	2.58 m
90" (Approx. 2.29 m)	1.97 m	3.60 m	2.91 m
100" (Approx. 2.54 m)	2.19 m	4.01 m	3.25 m
110" (Approx. 2.79 m)	2.41 m	4.42 m	3.58 m
120" (Approx. 3.05 m)	2.63 m	4.83 m	3.91 m
130" (Approx. 3.30 m)	2.85 m	5.24 m	4.25 m
140" (Approx. 3.56 m)	3.07 m	5.65 m	4.58 m
150" (Approx.3.81 m)	3.29 m	6.06 m	4.91 m
160" (Approx. 4.06 m)	3.51 m	6.46 m	5.25 m
170" (Approx. 4.32 m)	3.73 m	6.87 m	5.58 m
180" (Approx. 4.57 m)	3.94 m	7.28 m	5.91 m
190" (Approx. 4.83 m)	4.16 m	7.69 m	6.24 m
200" (Approx. 5.08 m)	4.38 m	8.10 m	6.58 m
210" (Approx. 5.33 m)	4.60 m	8.51 m	6.91 m
220" (Approx. 5.59m)	4.82 m	8.92 m	7.24 m
230" (Approx. 5.84 m)	5.04 m	9.33 m	7.58 m
240" (Approx. 6.10 m)	5.26 m	9.74 m	7.91 m
250" (Approx. 6.35 m)	5.48 m	10.15 m	8.24 m
260" (Approx. 6.60 m)	5.70 m	10.55 m	8.58 m
270" (Approx. 6.86 m)	5.92 m	10.96 m	8.91 m
280" (Approx. 7.11 m)	6.14 m	11.37 m	9.24 m
290" (Approx. 7.37 m)	6.36 m	11.78 m	9.57 m
300" (Approx. 7.62 m)	6.57 m	12.19 m	9.91 m

NOTE:

- The distance indicated in the table is an estimated value when an image with a resolution of 4096 × 2400 is projected. Please use them as reference during installation.

■ **GL-MS4011SG Short focal length lens**

Projection Screen Size (Diagonal Length)	Image Width	Projection distance
50" (Approx. 1.27 m)	1.10 m	1.16 m
60" (Approx. 1.52 m)	1.31 m	1.41 m
70" (Approx. 1.78 m)	1.53 m	1.66 m
80" (Approx. 2.03 m)	1.75 m	1.91 m
90" (Approx. 2.29 m)	1.97 m	2.16 m
100" (Approx. 2.54 m)	2.19 m	2.41 m
110" (Approx. 2.79 m)	2.41 m	2.66 m
120" (Approx.3.05 m)	2.63 m	2.91 m
130" (Approx. 3.30 m)	2.85 m	3.17 m
140" (Approx. 3.56 m)	3.07 m	3.42 m
150" (Approx. 3.81 m)	3.29 m	3.67 m
160" (Approx. 4.06 m)	3.51 m	3.92 m
170" (Approx. 4.32 m)	3.73 m	4.17 m
180" (Approx. 4.57 m)	3.94 m	4.42 m
190" (Approx. 4.83m)	4.16 m	4.67 m
200" (Approx. 5.08 m)	4.38 m	4.92 m
210" (Approx. 5.33 m)	4.60 m	5.17 m
220" (Approx. 5.59 m)	4.82 m	5.43 m
230" (Approx. 5.84 m)	5.04 m	5.68 m
240" (Approx. 6.10 m)	5.26 m	5.93 m
250" (Approx. 6.35 m)	5.48 m	6.18 m

NOTE:

- The distance indicated in the table is an estimated value when an image with a resolution of 4096 × 2400 is projected. Please use them as reference during installation.

Connecting Video Signals of the Computer

Connection During Single-Screen Mode Display

The single-screen mode displays signals (up to four signals) from a computer as a single video image.
To select to the single-screen mode, set “Display Mode” in the Setting menu to “Single”. (☞ Page 33)

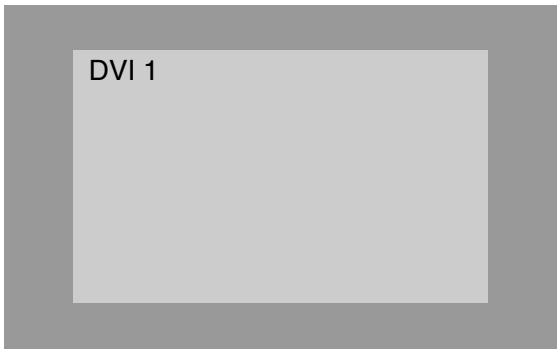
■ Possible Input Signals and Projected Image

Computer			Projector Terminal for Connection	Output Status		Displayed Projector Image
Resolution	Channel	Link Status				
4096×2400	2ch	Dual	DVI 1, DVI 3	2 Stripes	2048×2400	4096×2400
	4ch	Single	DVI 1 to DVI 4	Cross	2048×1200	
				4 Stripes	1024×2400	
4096×2160	2ch	Dual	DVI 1, DVI 3	2 Stripes	2048×2160	4096×2160
	4ch	Single	DVI 1 to DVI 4	Cross	2040×1080	
				4 Stripes	1024×2160	
3840×2400	2ch	Dual	DVI 1, DVI 3	2 Stripes	1920×2400	3840×2400
	4ch	Single	DVI 1 to DVI 4	Cross	1920×1200	
				4 Stripes	960×2400	
3840×2160	2ch	Dual	DVI 1, DVI 3	2 Stripes	1920×2160	3840×2160
	4ch	Single	DVI 1 to DVI 4	Cross	1920×1080	
				4 Stripes	960×2160	
2048×1200	1ch	Single	DVI 1	Normal	2048×1200	4096×2400
2048×1080	1ch	Single	DVI 1	Normal	2048×1080	4096×2160
1920×1200	1ch	Single	DVI 1	Normal	1920×1200	3840×2400
1920×1080	1ch	Single	DVI 1	Normal	1920×1080	3840×2160
1600×1200	1ch	Single	DVI 1	Normal	1600×1200	3200×2400
1280×1024	1ch	Single	DVI 1	Normal	1280×1024	2560×2048
1024×768	1ch	Single	DVI 1	Normal	1024×768	2048×1536
800×600	1ch	Single	DVI 1	Normal	800×600	1600×1200
640×480	1ch	Single	DVI 1	Normal	640×480	1280×960

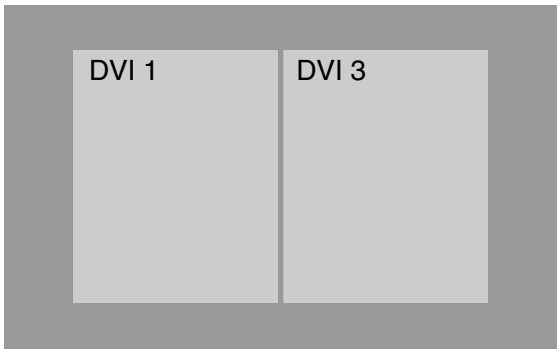
NOTE:

- This projector converts the frame rate to 60 Hz regardless of the synchronizing signal frequency at the computer’s end.
- If the resolution of the PC is 2048×1200 or lower, images are displayed upon doubling the number of the vertical and horizontal pixels.

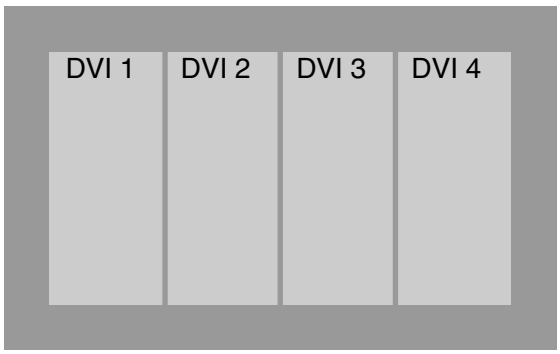
Normal



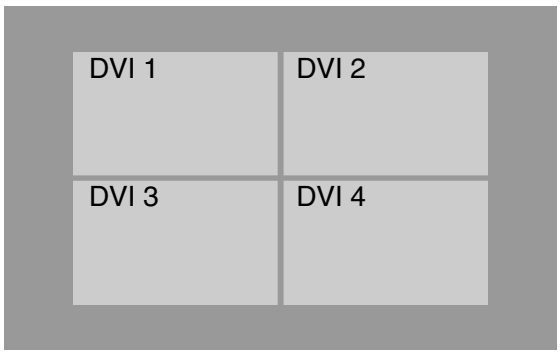
2 Stripes



4 Stripes

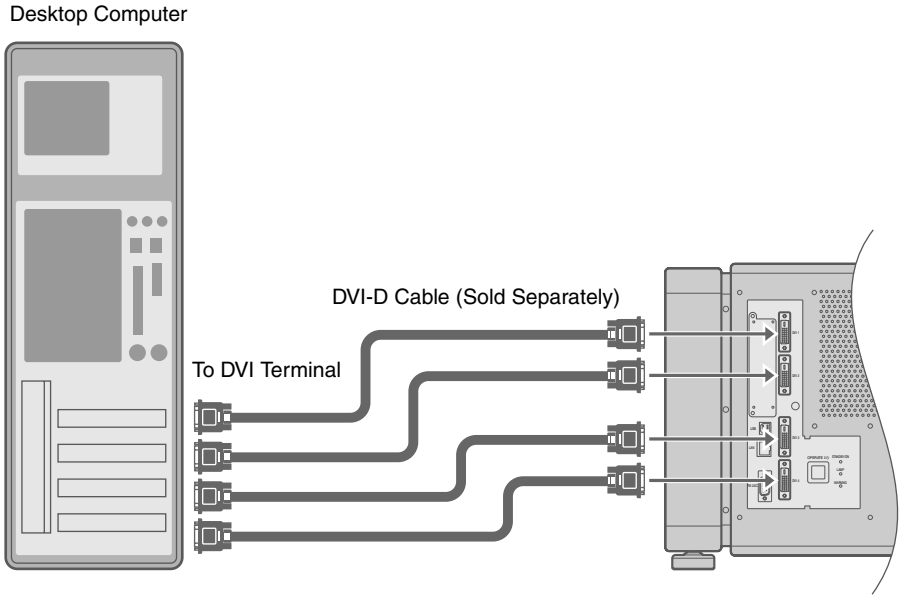


Cross



■ Connection During Single-Screen Mode Display

Below is the connection example for four-channel signals from the computer.
For two-channel signals from the computer, connect to the [DVI 1] and [DVI 3] terminals of this projector.



NOTE:

- Depending on your DVI-D cable, the signal may attenuate and the image become unstable.
- Use of DVI-D cables compliant with the DDWG standard is recommended.

Connecting Video Signals of the Computer (Cont'd)

Connection During Two-Screen/Four-Screen Mode Display

The two-screen/four-screen mode enables simultaneous display of signals from two or four computers.
To select the two-screen mode, set "Display Mode" in the Setting menu to "Double". To select the four-screen mode, set it to "Cross". (☞ Page 33)

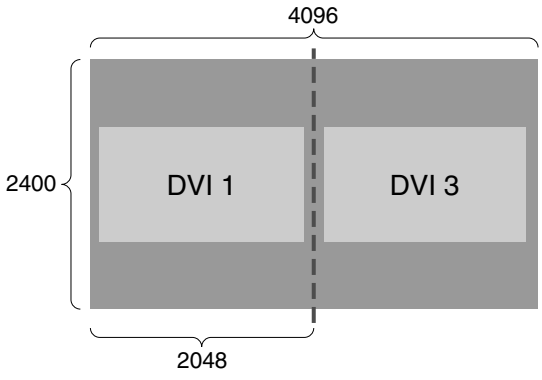
■ Possible Input Signals and Projected Image

Computer 1, Computer 2			Output Status	
Resolution	Channel	Link Status		
2048×1200	1ch	Single	Normal	2048×1200
2048×1080	1ch	Single	Normal	2048×1080
1920×1200	1ch	Single	Normal	1920×1200
1920×1080	1ch	Single	Normal	1920×1080
1600×1200	1ch	Single	Normal	1600×1200
1280×1024	1ch	Single	Normal	1280×1024
1024×768	1ch	Single	Normal	1024×768
800×600	1ch	Single	Normal	800×600
640×480	1ch	Single	Normal	640×480

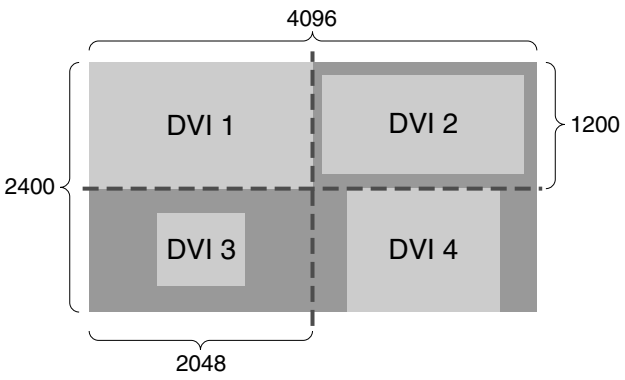
NOTE:

- This projector converts the frame rate to 60 Hz regardless of the synchronizing signal frequency at the computer's end.
- The respective signals are displayed at the center of the split screen.
- When in the two-screen mode, the screen appears blue (or black depending on the setting) when there is no input.

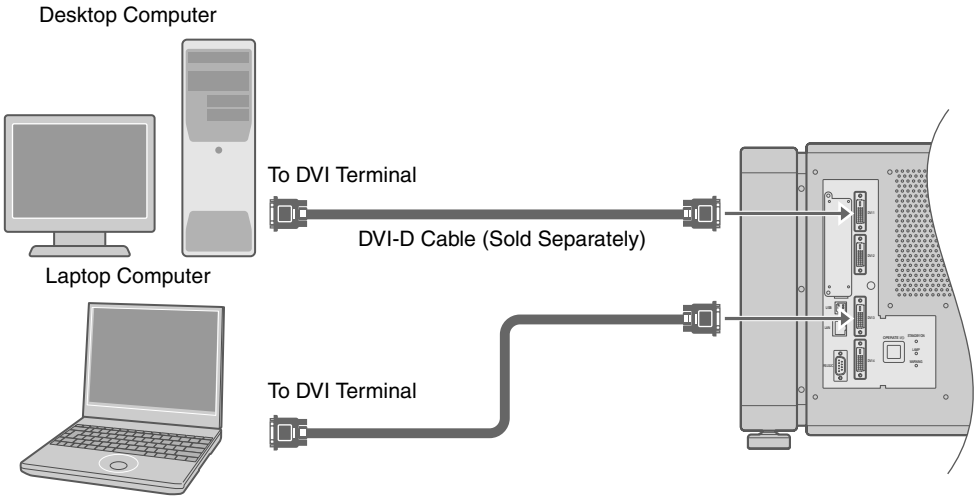
Two-Screen Mode
(Example) DVI 1: 1920×1080,
DVI 3: 1920×1080



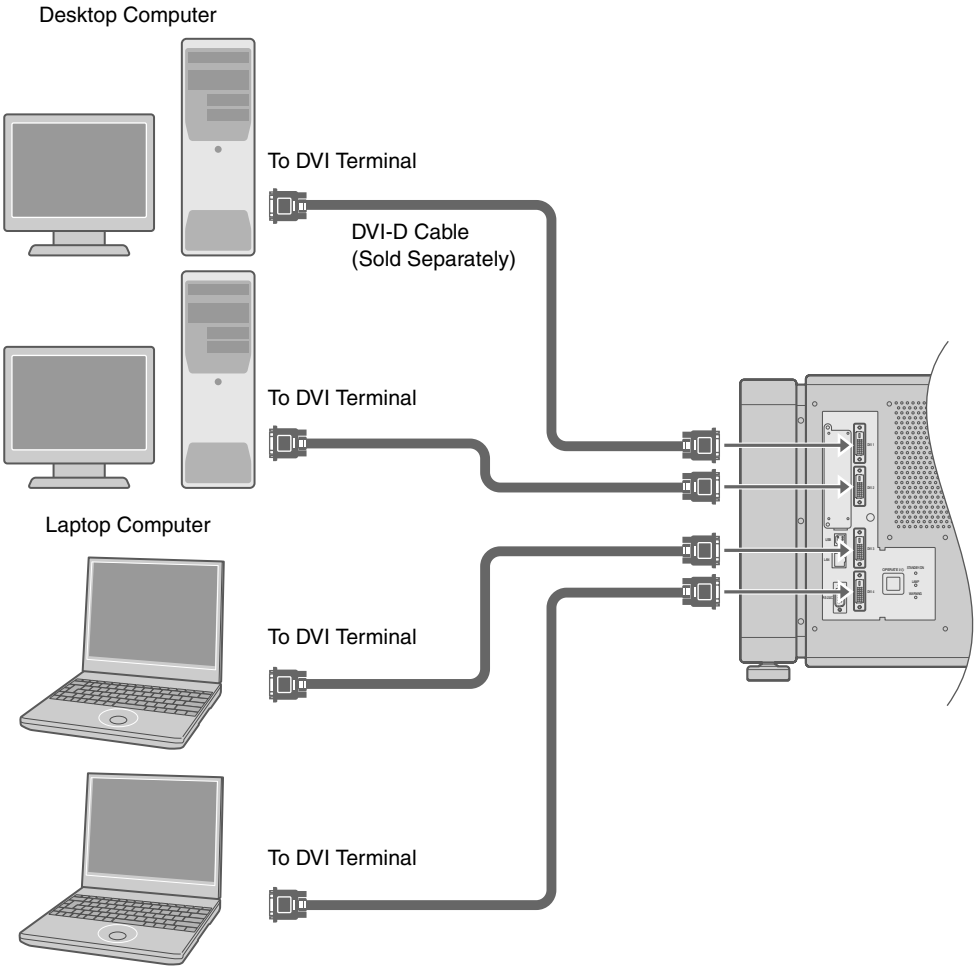
Four-Screen Mode
(Example) DVI 1: 2048×1200, DVI 2: 1920×1080,
DVI 3: 1024×768, DVI 4: 1600×1200



■ Connection Example During Two-Screen Mode



■ Connection Example During Four-Screen Mode



NOTE:

- Depending on your DVI-D cable, the signal may attenuate and the image become unstable.
- Use of DVI-D cables compliant with the DDWG standard is recommended.

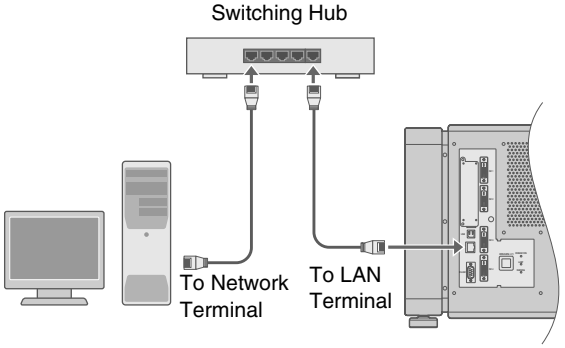
Connection Using a LAN Cable

Connect this projector, the computer for controlling this projector, and the switching hub using LAN cables, followed by configuring the network.

Connection Example

■ When assigning a static IP address

You can acquire the IP address from the controlling computer simply by configuring a network that consists of this projector, the controlling computer, and switching hub. Please refer to technical books on networks for details.



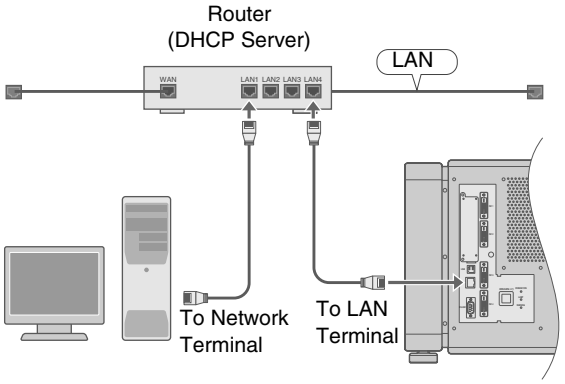
NOTE:

- Make use of Cat. 5 (equivalent or higher) straight 100Base-TX LAN cables.

CAUTION:

- Configure a network using only this projector, the controlling computer, and switching hub. Configuring the IP address settings when the LAN cable is connected to another network equipment or a hub that is connected to a different network may cause troubles to occur.

■ When assigning IP address from the DHCP server



NOTE:

- Make use of Cat. 5 (equivalent or higher) 100Base-TX LAN cables.

Specifications of PC for Controlling this Projector

OS	Windows XP Professional SP2 / Windows XP Home Edition SP2
CPU	Pentium3 1 GHz or higher
Memory	256 MB and above

NOTE:

- Make use of Internet Explorer Ver. 6.0.
- Windows® is either registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

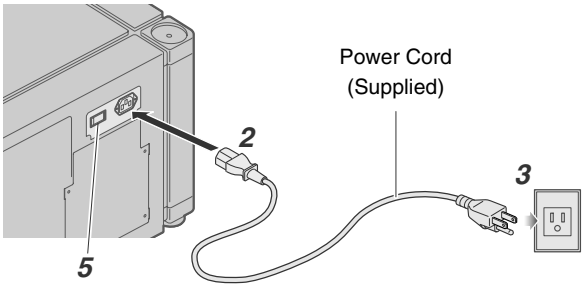
CAUTION:

- The PC specifications above are reference values for the application software to run smoothly, and are not intended to guarantee their operation.
  Note that the applications may not run smoothly depending on the condition of use of the respective users even when the system requirements are satisfied.

Turning On the Main Power

1 Check to ensure that this projector, computer, and switching hub are properly connected

2 Connect the power cord to the power input terminal of this projector



CAUTION:

- Do not connect the power cord when a lens (optional) is not attached.

3 Insert plug into the power outlet on the wall

4 Remove the lens cap

5 Turn on the main power of the projector to set to [I]

- The [STANDBY/ON], [LAMP], and [WARNING] indicators light up for about 45 seconds, after which the [STANDBY/ON] indicator turns red.

NOTE:

- The default IP address of all DLA-SH4KNL is “192.168.0.2”. If multiple units of DLA-SH4KNL are used on the same network, do not turn on the main power of more than one projector unit at the same time. Doing so will result in duplication of the IP address, and thereby preventing proper access.
- When using multiple units of DLA-SH4KNL, turn on the main power of the second unit and configure accordingly only after configuration of the first unit is complete. Configure subsequent units using the same procedure.
- When duplication occurs in the IP address, make sure that only one unit of DLA-SH4KNL is connected on the same network (turn off the main power of the other DLA-SH4KNL units). Allow a time interval of at least 10 minutes before accessing. If access fails, turn off the power of all network equipments on the same network, followed by turning them on again.

IP Address Settings

Set the IP address for this projector. There are 2 methods to set the IP address.

■ **Assigning a static IP address**

■ **Assigning an IP address from the DHCP Server**

Assigning a static IP address

The "IP Address Setting" of this projector is set to "Static IP" (the DHCP client function is OFF) by default.
Upon turning on the power, this projector starts running with the following IP address.

IP Address	: 192.168.0.2
Subnet Mask	: 255.255.255.0
Default Gateway	: 192.168.0.254

■ IP address setting at the computer

Set the computer to an IP address that enables communication with this projector.

1 Click "Start" and select "Control Panel"

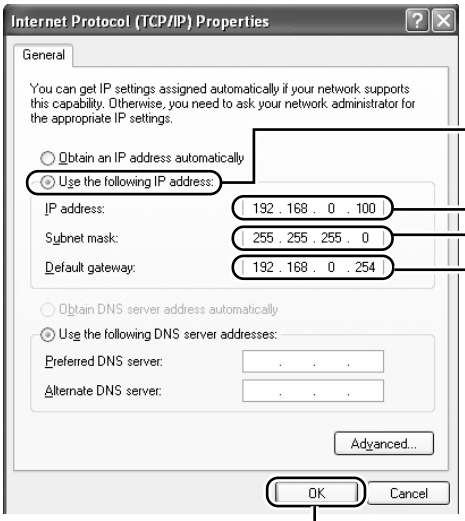
2 Double click "Network Connections"

3 Right-click on "Local Area" and select "Properties"

- Check to ensure that the "Client for Microsoft Networks" and "Internet Protocol(TCP/IP)" check boxes are selected.

4 Select "Internet Protocol(TCP/IP)" and click "Properties"

5 Set the IP address



① Select "Use the following IP address"

② Set the "IP address"
(For example, use 192.168.0.100 when DLA-SH4KNL is in its default settings)

NOTE:

- Make sure that you take note of the original IP address before altering.
- When setting, ensure that a duplicate IP address is not used within the same network environment.

③ Set "Subnet mask"
Set to a value that is appropriate for the setting operation. Clarify with the network administrator if you have any queries. (Use 255.255.255.0 when the camera is in its default settings)

④ When a "Default gateway" is present, make use of the IP address (e.g., 192.168.0.254)

⑤ Click "OK"

6 Click "OK" on the "Local Area Connection Properties" screen

■ Setting (Changing) the IP address of this projector

1 Launch the Internet Explorer on the computer

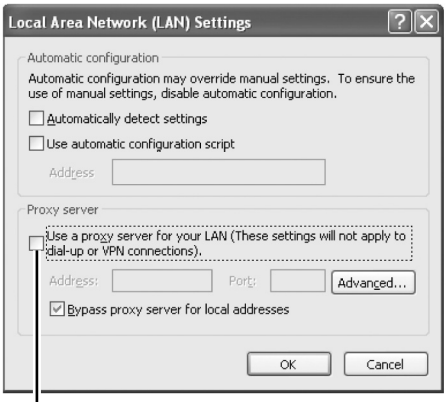
2 Check if the proxy has been set in the "LAN Setting" of the Internet Explorer

① Click "Tools" and select "Internet Options"

② Click "Connections" and click "LAN Setting"

③ Check if the check for "Use a proxy server for your LAN" has been selected

- If the check mark has been selected, deselect it.



Deselect the check

3 Check if the "Active scripting" of the Internet Explorer is disabled

① Click "Tools" and select "Internet Options"

② Click in the order of "Security"→ "Trusted Sites"→ "Sites"

③ Deselect the check in "Required server verification (https:) for all sites in this zone"

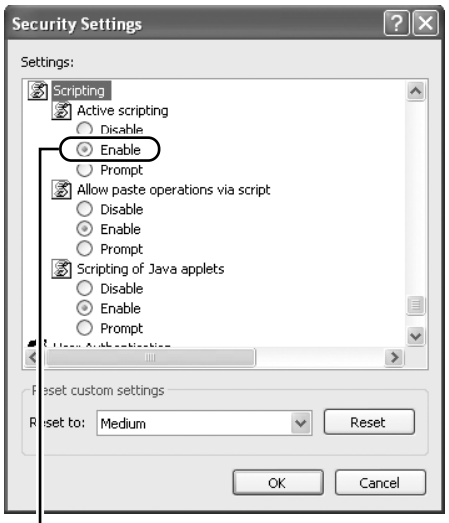
④ Enter "http://192.168.0.2" under "Add this web site to the zone" and click "Add"

⑤ Click "OK"

⑥ Select "Trusted Sites" and click "Custom Level"

⑦ Check if the check for "Active scripting" under "Scripting" has been selected

- If the check mark has been deselected, select it.



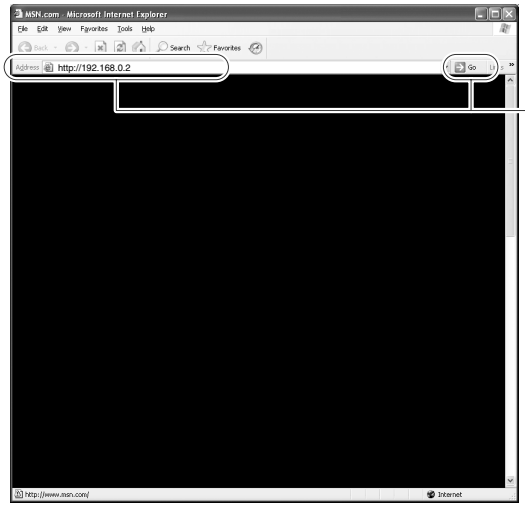
Select "Enable"

IP Address Settings (Cont'd)

Assigning a static IP address (Cont'd)

4 Enter "http://192.168.0.2" in the address field of the web browser, and click "Go"

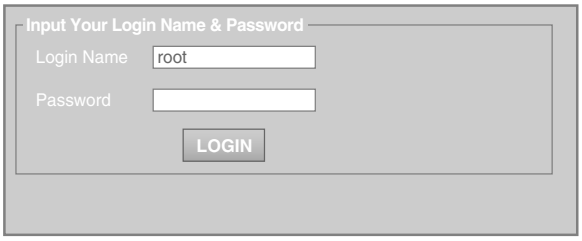
- A login screen for this projector appears.



NOTE:

- When "LAN Setting" in Internet Explorer is set to "Use a proxy server for your LAN" it may not be possible to designate addresses directly. Change the proxy settings.
- If a "Security Warning" screen appears, click "OK" and continue.

5 Enter "root" in Login Name



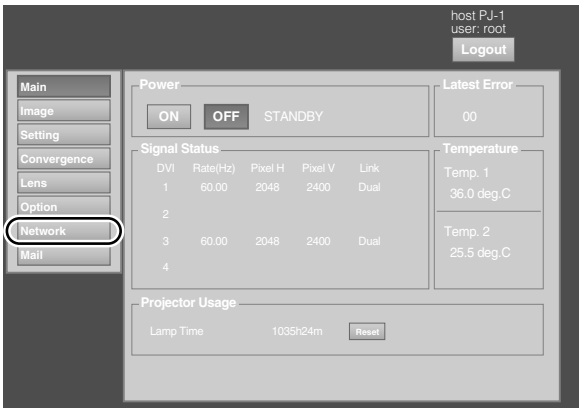
6 Click "LOGIN"

- The main menu for this projector appears.

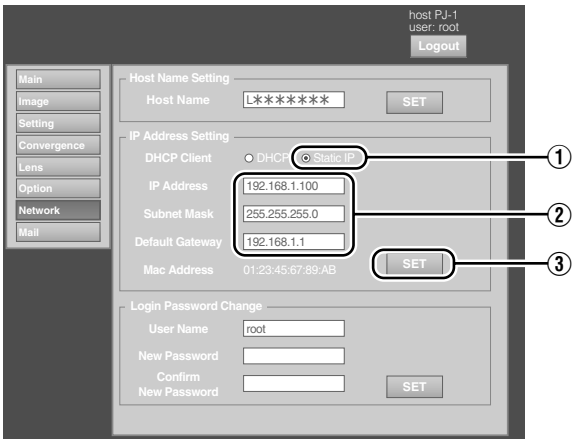
NOTE:

- You can alter the user name and password in the "Network" menu. Specify a user name and password of not more than eight single-byte alphanumeric characters. (☞ Page 37)
- If you have forgotten the password, please consult your authorized dealer.

7 Click "Network" in the main menu



8 Set the IP address for this projector



① Select "Static IP" in "DHCP Client"

② Enter the values for "IP Address", "Subnet Mask" and "Default Gateway"

③ Click "SET"

NOTE:

- Access from computers may not be sucessful as this projector's IP address has been changed. Set and change the computer's IP address when accessing this projector.

Assigning IP Address from the DHCP Server

The IP address is automatically assigned by the DHCP server.

1 After connecting, turn on the main power.

- Refer to page 22 on the details of connection.
- Refer to page 23 for procedures to turn on the main power.

2 Set the "DHCP Client" setting of this projector to "DHCP".

- The "IP Address Setting" of this projector is set to "Static IP" (the DHCP client function is OFF) by default. When assigning an IP address from the DHCP server, access this projector from the computer to alter the settings. For details on the setting procedures, refer to "Setting (Changing) the IP address of this projector". (☞ Page 25)

NOTE:

- Please consult the network administrator on the IP address assigned to this projector.
- When "DHCP Client" is set to "DHCP", and if the projector is started up in a LAN where a DHCP server does not exist, the projector will start up using the default IP address instead.

CAUTION:

- Configure the DHCP server such that the same IP address is assigned to the "Mac Address" of this projector by the DHCP server at all times. Connection may fail if the above setting is not performed.

Connecting this projector and the computer using a USB cable

You can connect this projector and the controlling computer using a USB cable.

- You need to install a driver in order to connect the projector and computer using a USB cable.

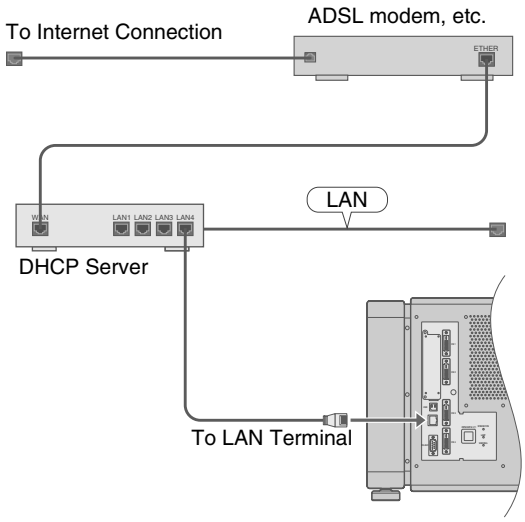
NOTE:

- For details on the installation of the USB driver, please consult your authorized dealer.

Using the Mail Delivery Feature

This feature enables delivery of mail (error message) to the preset e-mail address when error occurs inside this projector unit.

Connection Example (When DHCP Server is Used)



Projecting Image

If setting for this projector is not completed, refer to the "Setting Menu" (☞ Page 30) upon turning on the power and configure the settings accordingly.
Once the basic settings are configured, this projector can be used by simply performing the following operation procedures.

PREPARATION:

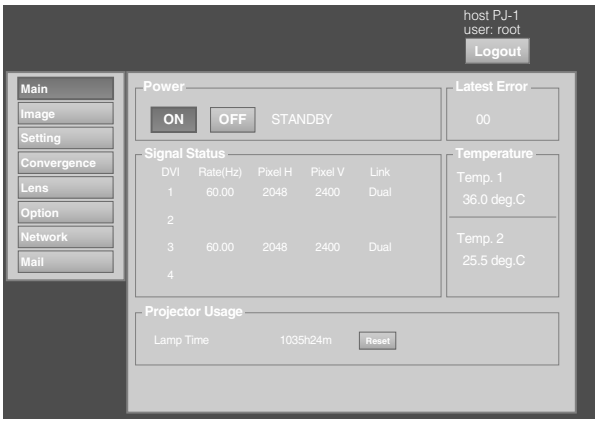
- Remove the lens cap.
- Connect this projector to the computer. (☞ Page 19, 21)
- Connect the LAN cable. (☞ Page 22)

1 Set this projector to the standby mode, and display the main menu

- Refer to "Turn on the main power" (☞ Page 23), and steps 4 to 6 of "Assigning an IP Address" (☞ Page 26).
- The [STANDBY/ON] indicator lights up in red.

2 Click the "ON" button under the "Power" item of the main menu to project the image

- The power of this projector turns on, and formatting is done taking a few minutes. A gray image will be displayed during formatting.
  The projected image appears once formatting ends.
- The [STANDBY/ON] indicator lights up in green.

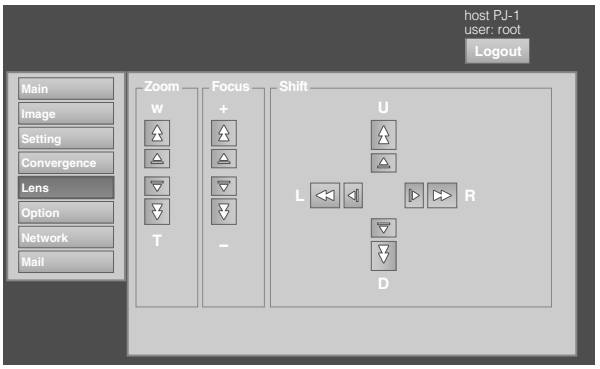


NOTE:

- You can also turn on the power by pressing the [OPERATE I/⏻] button on the projector unit for more than one second.
- The image may flicker for a few seconds immediately after projection starts. This is not a malfunction.
- After the lamp lights up, it takes about 1 minute or longer for the brightness of the video image on the screen to stabilize.

3 Adjust the zoom ratio (screen size) (when zoom lens is in use)

You can adjust the focus using the "Zoom" item of the **Lens** menu.



- **To enlarge the screen size:**
  Press the "W" (Wide) end of "Zoom"
- **To reduce the screen size:**
  Press the "T" (Tele) end of "Zoom"

NOTE:

- The screen size changes each time you click on the inner buttons (△/▽). (Fine control)
  The outer buttons (△/▽) change the screen size when they are depressed. (Coarse control)

4 Adjust the position of the projection screen

You can adjust the focus using the "Shift" item of the **Lens** menu.

- **To shift the image upward:**
  Press the "U" end of "Shift"
- **To shift the image downward:**
  Press the "D" end of "Shift"
- **To shift the image rightward:**
  Press the "R" end of "Shift"
- **To shift the image leftward:**
  Press the "L" end of "Shift"

NOTE:

- When a zoom lens is used, the adjustment range for lens shift is between 0% to ±50% in the vertical direction, and between 0% to ±25% in the horizontal direction (during single-screen display).
  When a short focal length lens is used, the adjustment range for lens shift is between 0% to ±15% in the vertical direction, and between 0% to ±5% in the horizontal direction (during single-screen display). (☞ Page 14)
- The position changes each time you click on the inner buttons (△/▽). (Fine control)
  The image shifts when the outer buttons (△/▽) are depressed. (Coarse control)
- The lens shift feature does not function if the lens mechanism is secured. (☞ Page 14 "Lens Fixation Mechanism")

5 Adjust the focus

You can adjust the focus using the "Focus" item of the Lens menu.

● **To move the focus point closer:**

Press the "+" (Near) end of "Focus"

● **To move the focus point away:**

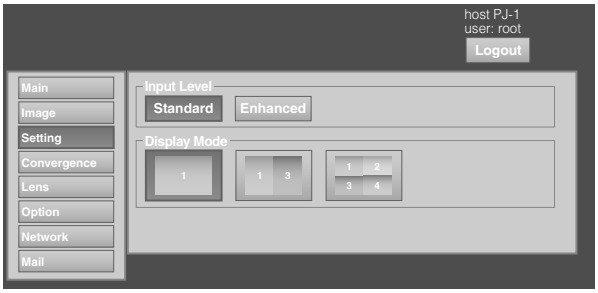
Press the " – " (Far) end of "Focus"

NOTE:

- The focus changes each time you click on the inner buttons (△/▽). (Fine control)
  The outer buttons (△/▽) change the focus when they are depressed. (Coarse control)

6 Select a screen mode for projection

You can specify the screen mode using "Display Mode" of the Setting menu. (☞ Page 33)



NOTE:

- The projected image varies according to the mode of connection. (☞ Page 19, 21)

7 Click the "OFF" button under the "Power" item of the Main menu to end the projection

- A gray image will be displayed for a few minutes during the ending process. When the process ends the projector switches to the cool down mode, and the [STANDBY/ON] indicator appears blinking in red.
- After exiting the cool down mode, the projector switches automatically to the standby mode, and the [STANDBY/ON] indicator lights up in red.
- You can also turn off the power by pressing the [OPERATE I/⏻] button on the projector unit for more than one second.

Cool down mode

The cool down mode is a function that cools down the lamp for an interval of about 180 seconds after projection ends (ending process).
This function is to prevent deformation and damage of the internal components of the projector due to heat from the overheated lamp. It also prevents lamp breakage and shortened lamp life.

- When the projector is in the cool down mode, the [STANDBY/ON] indicator appears blinking in red.
- Do not shut down the main power supply or unplug the power cord when in the cool down mode. Also, do not block the air inlets and vent holes. Doing so may shorten the lamp life and cause a malfunction.

8 Turn the main power at the rear of the projector unit to off [O]

- The [STANDBY/ON] indicator on the projector unit goes off.

CAUTION:

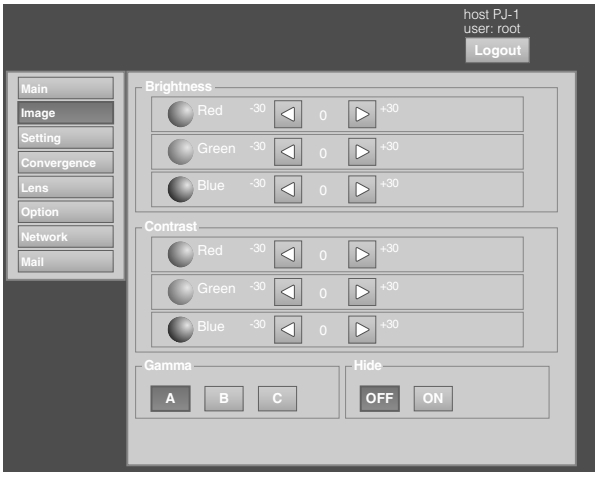
- Do not turn off the main power supply switch when in the cool down mode. Doing so may shorten the lamp life and cause a malfunction.
- Upon using, attach the lens cap to prevent soiling of the lens.
- When the projector is not to be used for a long time, disconnect the power plug.

Useful Features During Projection

■ Hiding the projected image temporarily

The projected image can be hidden by clicking the "ON" button under the "Hide" item of the Image menu.

- When the image is not displayed, pressing "OFF" under the "Hide" item to display the hidden image.



NOTE:

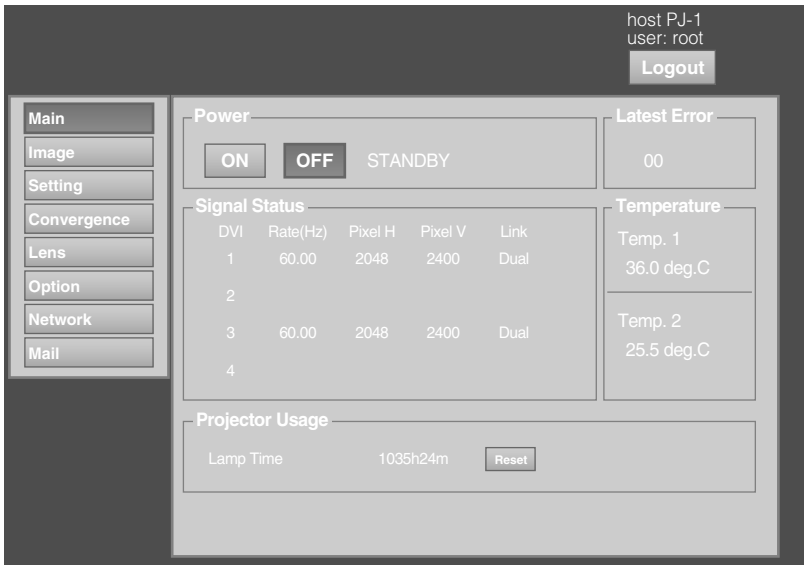
- When the image is hidden, the [STANDBY/ON] indicator appears blinking in green.

Setting Menu (Cont'd)

After installation and connection are complete, perform the necessary adjustment and setting.
Operate the menus using the computer's browser to make adjustments and configure settings.

Main Menu

This menu displays the ON/OFF status of the power supply and information on signals input to the projector.



NOTE:

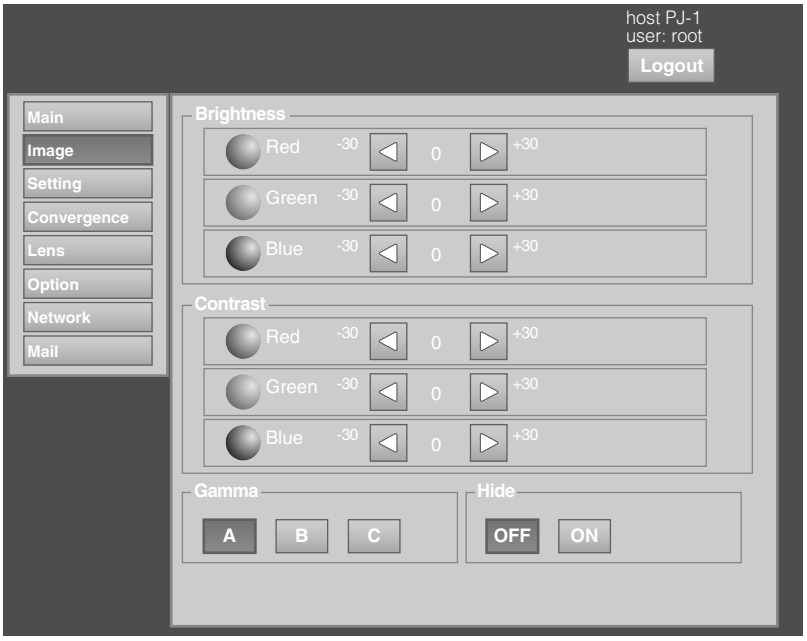
- When the power of this unit is off (main power is on), the "Main", "Image", "Setting", "Convergence", "Lens" and "Option" menus will be grayed out and will not be selectable.

Item	Setting Value	Description
Power	ON OFF	For turning the power ON/OFF. ON : Turns on the power. OFF : Turns off the power. **NOTE:** ● The following operating modes of the projector are displayed to the right of the OFF button. STANDBY : Standby (OFF) PROJECTION : Lamp Illuminated (ON) FAN ENABLE : FAN Enable (OFF→ON) LAMP ENABLE : LAMP Enable (OFF→ON) DEVICE ENABLE : Elemental Device Enable (OFF→ON) COOLING : Cooling (OFF) EMERGENCY : Error Occurred (Cooling not performed) EMERGENCY COOLING : Error Occurred (Cooling performed) ● When in the standby mode, clicking the ON button each time switches the mode in the sequence of STANDBY→DEVICE ENABLE→LAMP ENABLE→FAN ENABLE→PROJECTION. ● Clicking the **OFF** button when the power is on switches the projector to the cooling mode. The power of the projector cannot be turned on during the cooling process (180 seconds).
Latest Error	—	Displays the latest error number. Refer to "Latest Error" for information on the error number and details. (☞ Page 48)
Signal Status		Displays information on the input signals.
DVI	—	DVI : Displays the input terminal number.
Rate(Hz)	—	Rate(Hz) : Displays the vertical frequency.
Pixel H	—	Pixel H : Displays the horizontal resolution.
Pixel V	—	Pixel V : Displays the vertical resolution.
Link	—	Link : Displays the link status of the DVI terminal.
Temperature		Displays the interior temperature of the projector.
Temp. 1	—	Temp. 1 : External Temperature
Temp. 2	—	Temp. 2 : Internal Temperature
Projector Usage		Displays the time interval during which the lamp is in use.
Reset	—	**CAUTION:** ● Do not click on "Reset" unless the lamp is replaced.

Setting Menu (Cont'd)

Image Menu

This menu is used for adjusting the picture quality.

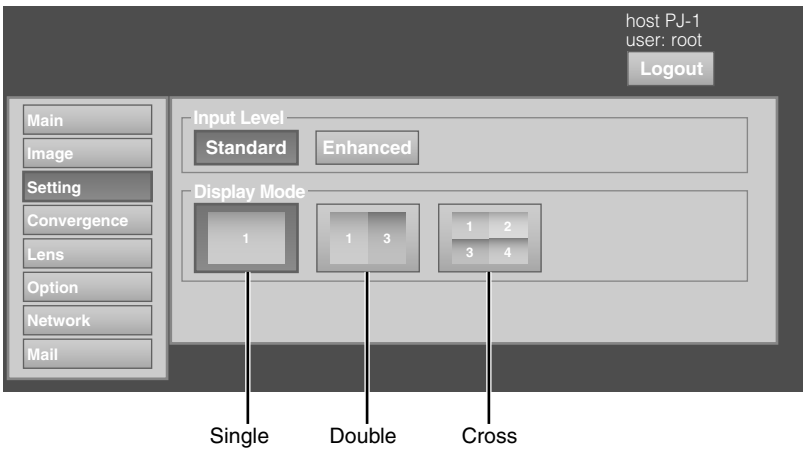


● denotes the factory default.

Item	Setting Value	Description
Brightness		For adjusting the brightness of the red, green, and blue colors.
Red	–30 to +30 (Default Value: 0)	
Green	–30 to +30 (Default Value: 0)	
Blue	–30 to +30 (Default Value: 0)	
Contrast		For adjusting the contrast of the red, green, and blue colors.
Red	–30 to +30 (Default Value: 0)	
Green	–30 to +30 (Default Value: 0)	
Blue	–30 to +30 (Default Value: 0)	
Gamma	● A B C	For specifying the tone characteristics of the image. A : Sets gamma to 2.2. B : Sets gamma to 1.8. C : Sets gamma to 2.6.
Hide	● OFF ON	Enables temporary hiding of the image. OFF : Do not hide image. ON : Hides image.

Setting Menu

This menu is used for specifying the input level of the terminal and the display mode.



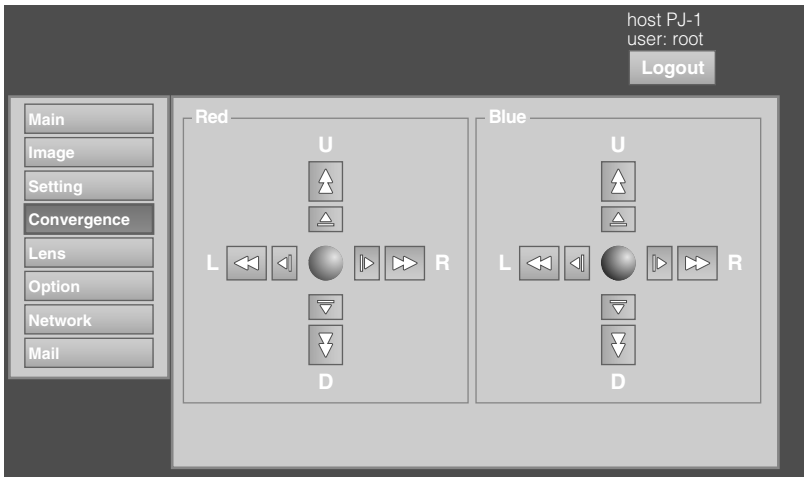
● denotes the factory default.

Item	Setting Value	Description
Input Level	● Standard Enhanced	For specifying the input level of the video signals. Standard : Set to this value under normal circumstances. (Signal level 0 to 255) Enhanced : For specifying when the signal level is between 16 and 235.
Display Mode	● Single Double Cross	For specifying the display mode of the projection screen. Single : Displays input signals on a single screen. Double : Displays two different input signals on two screens. The left screen displays images of the DVI 1 terminal, and the right screen displays images of the DVI 3 terminal. Cross : Displays four different input signals on four screens. The top left screen displays images of the DVI 1 terminal, the top right screen displays images of the DVI 2 terminal, the bottom left screen displays images of the DVI 3 terminal, while the bottom right screen displays images of the DVI 4 terminal. **NOTE:** ● Please refer to "Connecting Video Signals of the Computer" for details. (☞ Page 18 to 21)

Setting Menu (Cont'd)

Convergence Menu

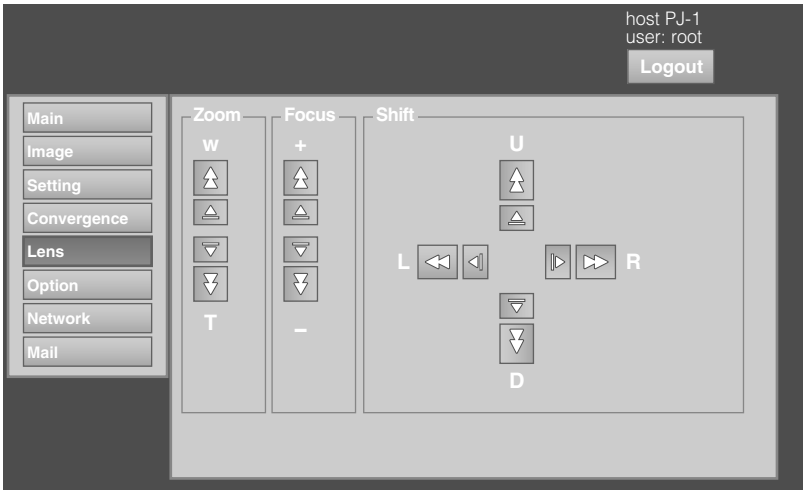
This menu is used for correcting color shifts in the optical system.



Item	Setting Value	Description
Red **Blue**	— —	For adjusting the horizontal/vertical position of red and blue colors on the image. **NOTE:** ● The green color value is fixed. ● The outer buttons are used for adjustment in units of 1/4 pixels, and the inner buttons in units of 1/10 pixels. ● When the image is flipped horizontally or vertically, the horizontal and vertical directions are reversed. ● Use images with a clear outline (such as color cross hatch patterns available in this projector (☞ Page 36)) for adjustment. **CAUTION:** ● When the movement exceeds the limit, the color of the button turns red.

Lens Menu

This menu is used for adjusting the projection lens.

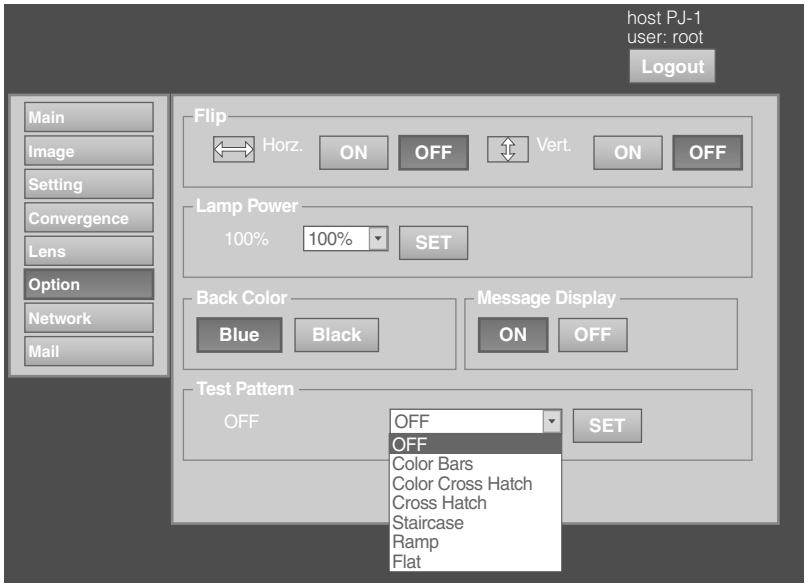


Item	Setting Value	Description
Zoom	—	For adjusting the zoom ratio (screen size). **NOTE:** ● The zoom position changes each time the inner button is clicked. The zoom position changes when the outer button is depressed.
Focus	—	For adjusting the focus position. **NOTE:** ● The focus position changes each time the inner button is clicked. The focus position changes when the outer button is depressed.
Shift	—	For adjusting the horizontal and vertical positions of the projection screen. **NOTE:** ● The shift position changes each time the inner button is clicked. The shift position changes when the outer button is depressed. **CAUTION:** ● When the movement exceeds the limit, the color of the button turns red.

Setting Menu (Cont'd)

Option Menu

This menu is used for specifying settings for flipping images and screen displays.

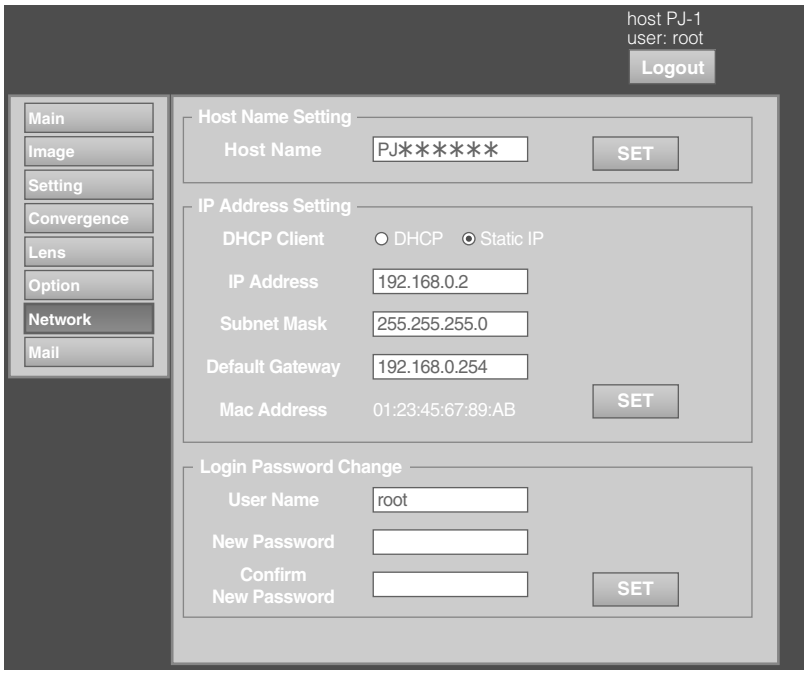


● denotes the factory default.

Item	Setting Value	Description
Flip **Horz.** **Vert.**	ON ● OFF ON ● OFF	For specifying settings if images are vertically or horizontally flipped when they are projected from the opposite side of the screen, or when mirrors are used for projection. ON : Flips image horizontally. OFF : Do not flip image horizontally. ON : Flips image vertically. OFF : Do not flip image vertically.
Lamp Power	● 100 % to 80 %	For setting the brightness of the light source lamp. **NOTE:** ● Brightness switches in about a step of 3 % between the 80 % to 100 % range.
Back Color	● Blue Black	For specifying the background color during message display or when projection fails, such as when there is no input signal. Blue : Sets the screen to blue color. Black : Sets the screen to black color.
Message Display	● ON OFF	For specifying whether to display the message. ON : Displays message. OFF : Do not display the test pattern.
Test Pattern	● OFF Color Bars Color Cross Hatch Cross Hatch Staircase Ramp Flat	For projecting the test pattern. OFF : Do not display the test pattern. Color Bars : Displays the color bar. Color Cross Hatch : Displays the color cross hatch pattern. Cross Hatch : Displays the cross hatch pattern. Staircase : Displays the staircase. Ramp : Displays the ramp pattern. Flat : Displays the flat pattern.

Network Menu

For configuring the network settings.



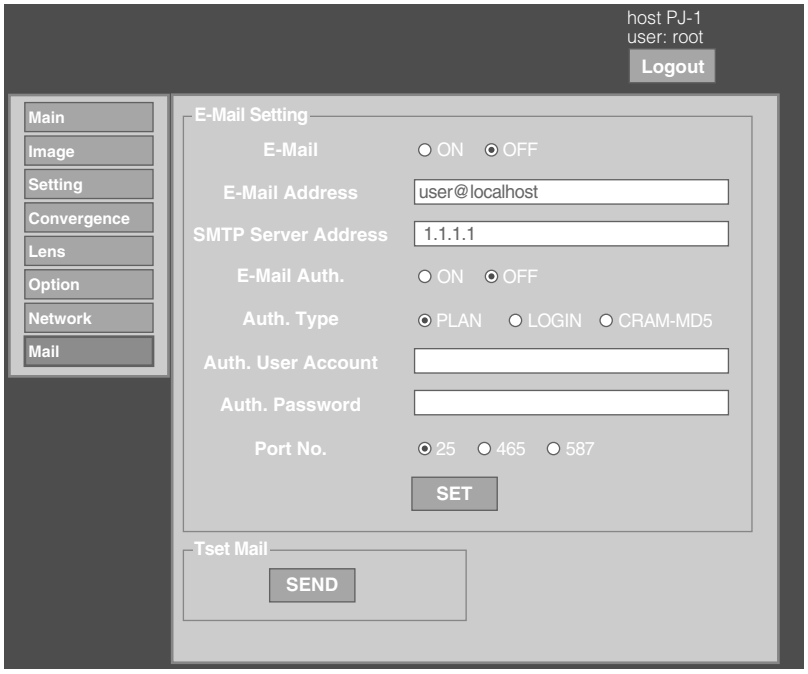
● denotes the factory default.

Item	Setting Value	Description
Host Name Setting **Host Name**	— (Default Value: PJ******)	For specifying the host name. **NOTE:** ● You can change it to a random name. Input up to 8 characters using single-byte alphanumeric characters and " - " (hyphen or minus). ● "******" displays the lower 3 bytes of the MAC address of this unit.
IP Address Setting **DHCP Client** **IP Address** **Subnet Mask** **Default Gateway** **Mac Address**	DHCP ● Static IP (Default Value: 192.168.0.2) (Default Value: 255.255.255.0) (Default Value: 192.168.0.254) —	For configuring the network settings. DHCP : Select this to acquire the IP address from the DHCP server automatically. Static IP : Select this to configure the IP address manually. IP Address : Specify the IP address. Subnet Mask : Specify the subnet mask. Default Gateway : Specify the default gateway. Mac Address : Displays the MAC address. (Cannot be specified)
Login Password Change **User Name** **New Password** **Confirm New Password**	root — —	For changing the login name and password. User Name : For changing the login name. New Password : For changing the login password. Confirm New Password : Re-enter the new password. (For confirmation) **NOTE:** ● You can change it to a random name. Specify a name up to eight single-byte alphanumeric characters and " - " (hyphen or minus). ● If you have forgotten the password, please consult your authorized dealer.

Setting Menu (Cont'd)

Mail Menu

This menu is for configuring the mail settings, which sends out an error message to the computer of the preset address when error occurs on this projector.



■ Error message sent from this projector

(Example) When error occurs at the DD-RB board

Mail title:

4KPJ1 report mail

Message:

Error Code	32 "Trouble with DD-RB circuit board"
System Time	25 h 40 m
Lamp Time	0 h 9 m
Inside temp	31 deg.C
Outside temp	25 deg.C

NOTE:

- Refer to the code in the "Latest Error" for the error code. (☞ Page 48)

● indicates the factory default

Item	Setting Value	Description
E-Mail Setting		For configuring the e-mail feature.
E-Mail	ON ● OFF	ON : Use the mail feature. OFF : Do not use the mail feature.
E-Mail Address	— (Default Value: user@localhost)	For specifying the destination e-mail address. **NOTE:** ● Specify an address up to a maximum of 64 characters. ● Make use of single-byte alphanumeric characters, "-", ".", "_", and "@".
SMTP Server Address	— (Default Value: 1.1.1.1)	For specifying the address of the outgoing mail server. **NOTE:** ● Specify an address up to a maximum of 15 characters. ● Make use of numbers and ".".
E-Mail Auth.	ON ● OFF	ON : Enable the e-mail authentication feature. OFF : Disable the e-mail authentication feature.
Auth. Type	● PLAIN LOGIN CRAM-MD5	For configuring the e-mail authentication type. PLAIN : Set e-mail authentication to "PLAIN". LOGIN : Set e-mail authentication to "LOGIN". CRAM-MD5 : Set e-mail authentication to "CRAM-MD5".
Auth. User Account	—	For configuring the account name during e-mail authentication. **NOTE:** ● Specify an address up to a maximum of 31 characters. ● Make use of single-byte alphanumeric characters and "-".
Auth. Password	—	For configuring the password during e-mail authentication. **NOTE:** ● Specify an address up to a maximum of 31 characters. ● Make use of single-byte alphanumeric characters and "-".
Port No.	● 25 465 587	For configuring the SMTP server port number.
Test Mail	—	When the "SEND" button is clicked, the test mail with the contents configured in the E-Mail Setting will be sent.

RS-232C Interface

You can control this projector by connecting the computer to this unit using a RS-232C cross cable (D-sub 9 pins). The commands to control this unit and the response data format against the received commands are explained here.
For details, please consult your authorized dealer.

Communication Specifications

Communication specifications for this unit are as follows:

Transfer Rate	19200 bps
Data Length	8 bit
Parity	None
Stop Bit	1 bit
Flow Control	None

Command Format

■ Command Data Format (PC→Projector)

When sending a control command to this unit, use the following data format:

Header : Designates the head of data and the data type.
"!" (21h): Assigns command to the projector (Command)
"?" (3Fh): Query to the projector (Asking command)

ID : "1": Identification number of the projector (Factory setting is 1)

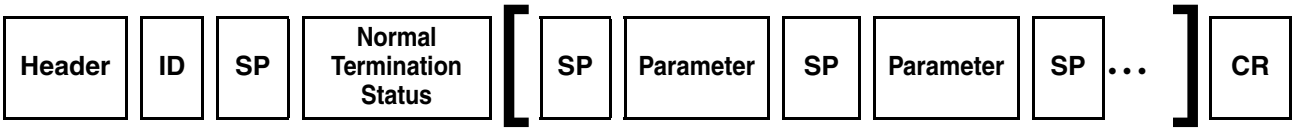
SP : Designates the delimiter between ID and command, command and parameter, as well as parameter and parameter. (20h)

CR : Designates the terminal of the data. (0Dh)

* [ ] is not necessary for Asking command.

■ Response Data Format (Projector→PC)

Upon executing a control command, this unit sends back response data to the computer in this format.



Header : Designates the head of the response data.
"@" (40h): Fetches data from the projector

ID : "1": Identification number of the projector (Factory setting is 1)

SP : Designates the delimiter between ID and normal termination status, normal termination status and parameter, as well as parameter and parameter. (20h)

Normal Termination Status : "0" (30h)

CR : Designates the terminal of the data. (0Dh)

* [ ] is not applicable when sending commands to the projector.

■ Parameters used for the data format

The following 2 types of parameters are used for command and response data:
(1) ON/OFF (2) Special Parameter
Each parameter is as follows:

(1) ON/OFF

Shows the status (ON or OFF) of the unit, such as POWER and HIDE.

Character	Hex	Meaning
0	30	OFF
1	31	ON

(2) Special parameters

Operation mode parameters

Character	Hex	Meaning
0000	30 30 30 30	Standby state
0001	30 30 30 31	Power ON state
0002	30 30 30 32	Cooling state
0003	30 30 30 33	Emergency cooling state
0004	30 30 30 34	Emergency state

DHCP client parameters

Character	Hex	Meaning
0	30	DHCP
1	31	Static IP

IP address parameters
Display the IP address using the dot (“.” (2HE)) delimiter.
Example: “192.168.0.10”

■ External control command table

Function	Command	Setting		Asking		Data Type	
		Power On	ELSE	Power On	ELSE	ON/OFF	Special Parameter
Power	U0F	✓(OFF)	✓(ON)	—	—	✓	—
Hide	U00	✓	—	✓	—	✓	—
Operation Mode	UA0	—	—	✓	✓	—	Standby...
DHCP Client	UD2	✓	✓	✓	✓	—	DHCP...
IP Address	UD3	✓	✓	✓	✓	—	192.168. ...
Network Restart	UDC	✓	✓	✓	✓	—	[0] Fixed

NOTE:

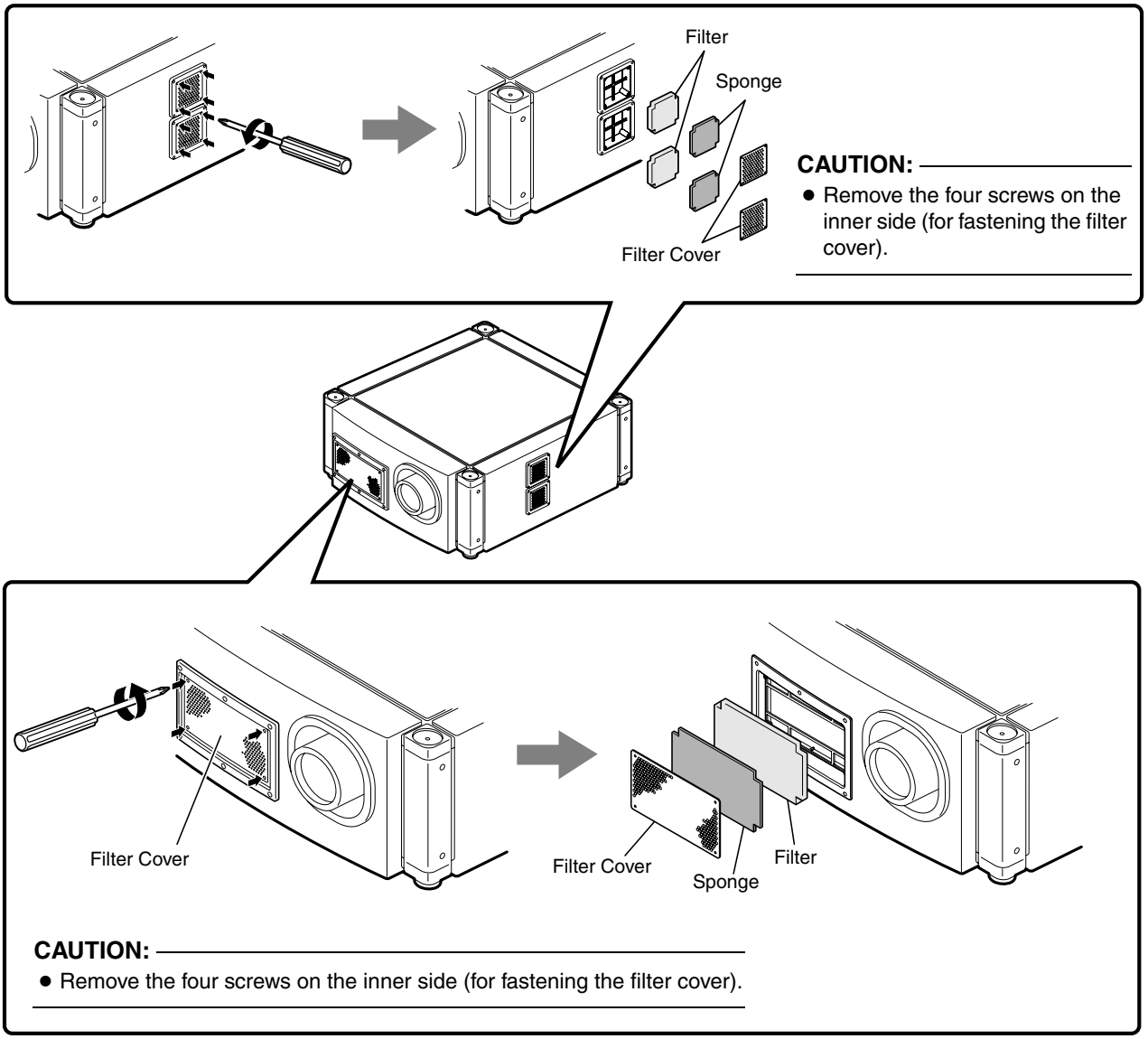
- After configuring the “DHCP Client” and “IP Address”, execute “Network Restart”.

Maintenance

Turn off the power of the projector unit, and unplug the power cord when cleaning or replacing the filter.

Cleaning and Replacing the Filter

Clean the filter regularly. If the filter is soiled, air intake efficiency may deteriorate, thus resulting in malfunction of the product.
Replace with a new one if the filter fails to remove dust thoroughly or if it is damaged.
Failure to do so may cause dust to enter the projector and shadows to appear on the projected image.
If dirt has entered this product or if you need to purchase the filter, please consult your authorized dealer.



1 Remove the filter cover

The filter is located at the front and side of the projector unit.

2 Remove the sponge and filter

Hold the center of the filter using your fingers, and pull the filter toward you to remove it.

3 Clean the sponge and filter

Remove any dirt or dust using a vacuum cleaner.

CAUTION:

- Do not clean using a flammable air duster. This may cause fire.

4 Mount the sponge and filter

Mount the filter and sponge to the projector using the reverse removed procedure.

Finally, check to ensure that the filter cover is firmly mounted.

NOTE:

- Mount the filter correctly. Failure to do so may cause the projector to malfunction.
- The projector may stop operating if a damaged filter or filter panel is used. In this case, replace the filter or filter panel with a new one.

Routine Servicing

■ Clean dirt on the cabinet

Do this with a soft cloth. In case of heavy soiling, soak a cloth in neutral detergent diluted with water, wring dry and wipe, followed by wiping again using a dry cloth.
Pay attention to the following to prevent the cabinet from deteriorating in condition, getting damaged, or the paint from coming off.

- Do not wipe with a stiff cloth
- Do not wipe with force
- Do not wipe with thinner or benzene
- Do not spray volatile chemicals like insecticide
- Do not allow prolonged contact with rubber or plastic products

■ Remove dirt that is attached to the vent holes

Do this using a vacuum cleaner. Wipe using a cloth if a vacuum cleaner cannot be used. Leaving dust attached may prevent adjustment of the internal temperature and result in malfunction of the projector.

■ Clean dirt on the lens

Do this using commercial blowers or lens cleaning papers (for cleaning glasses and cameras).
Do not use fluid-type cleaning agents. This may lead to peeling of the surface coating film.
Lens surface is fragile. Avoid rubbing or knocking it.

Replacement of Light Source Lamp

The light source lamp is a consumable item. Replace with a new lamp unit if the image appears dull or if the lamp burns out.

- When the lamp needs to be replaced soon, users will be notified through a message on the screen and the indicator. (☞ Page 46, 47)
- The life of the lamp used for this projector is about 1500 hours.
  This is the average life of lamps, and not a guaranteed value.
- The lamp life may not reach 1500 hours depending on the operating conditions.
- Deterioration progresses rapidly when the remaining lamp usable time is short.
- If the image is dark or color tone abnormal, replace the lamp unit as soon as possible.
- For details on replacement of the lamp unit, please consult your authorized dealer.
- Lamp has to be replaced by an authorized person. Do not remove PANEL BACK and lamp Unit. This may cause fire and electric shock hazards. Access to the lamp unit only possible with use of tool.

Troubleshooting

Check the following points before sending this product for repair.
The following phenomena are not malfunctions.

■ If there is no abnormality on the screen when the phenomena below appear, they are not malfunctions.

- The top or front part as well as the rear of the projector unit is hot
- A creaking sound is heard from the projector
- Device noise is heard from the interior of the projector
- There is color bleeding on the screen

■ When the projector fails to run properly due to external noises, perform the following operations.

① Check to ensure that the power is shut down. Unplug the power cord, and insert again.
② Turn on the power of the projector.

■ A sound maybe heard when the lamp burn out. However, this is not a hazard.

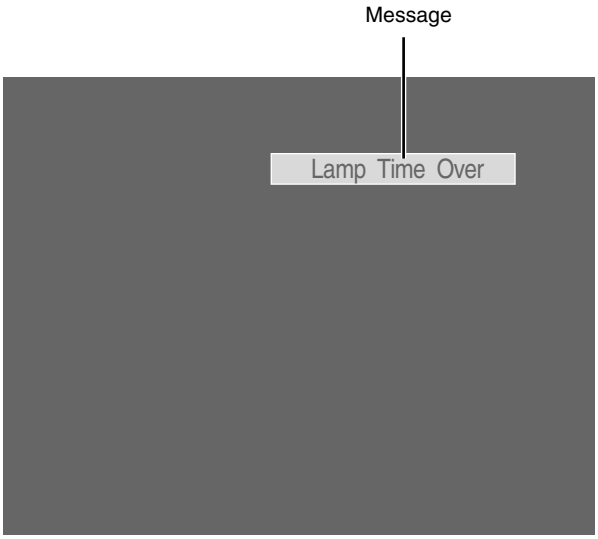
■ D-ILA devices are manufactured using extremely high-precision technology. However, some of the pixels may not lit up or remain permanently lit up.

Symptom	Probable Cause	Corrective Action	Reference Page
Power is not supplied	● Is the power cord disconnected?	● Insert the power cord (plug) properly.	☞ Page 23
	● Is the main power supply switched turned on?	● Turn on the main power supply switch of the projector unit.	☞ Page 23
	● Is the lamp in the cool down mode?	● Turn on the power again after the cool down mode ends.	☞ Page 29
	● Is the lamp protection function triggered? (This function is triggered when the power shuts down such as during power failures.)	● Wait till the temperature of the lamp has gone down. (Turn on the main power supply switch to run the fan and cool down the lamp.) Turn on the power after about 180 seconds.	—
Image is dark	● Is the lamp near exhaustion?	● Check the "Lamp Time" setting of the Main menu. When the lamp life is near its end, please consult your authorized dealer.	☞ Page 30
Projector works when the power is turned on, but stops abruptly after a few minutes	● Are the air inlets and vent holes blocked?	● Turn off the main power supply switch, and remove the blockage. After removing, turn on the power again.	☞ Page 10 to 12, 29
	● Is the temperature of the room high?	● Set the temperature of the room or the surrounding temperature of this projector to an appropriate level.	☞ Page 49
	● Are the filters dirty?	● Clean the filters.	☞ Page 42
Video image does not appear	● Is the lens cap removed?	● Remove the lens cap.	☞ Page 10
	● Are devices properly connected?	● Connect the devices correctly.	☞ Page 19, 21
	● Is the power of the connected devices turned on?	● Turn on the power of the connected devices.	—
	● Are correct signals being output from the connected devices?	● Configure the connected devices correctly.	—
	● Are the signals of the connected devices possible input signals?	● Check to ensure that they are possible input signals, and input compatible signals accordingly.	☞ Page 18, 20
	● Is the image temporarily hidden?	● Set "Hide" of the Image menu to "OFF" to display the image.	☞ Page 29, 32
Video image is blur	● Is the projector out of focus?	● Adjust the focus using "Focus" of the Lens menu.	☞ Page 29, 35
	● Is the projection distance too short or too long?	● Set it to a correct distance.	☞ Page 16, 17

Symptom	Probable Cause	Corrective Action	Reference Page
Image is unusually dark or bright	● Is the brightness level properly adjusted?	● Adjust accordingly using "Brightness" of the Image menu. ● Adjust "Lamp Power" in the Option menu.	☞ Page 32 ☞ Page 36
Coloring of the image is poor or distorted	● Is the contrast level properly adjusted?	● Adjust accordingly using "Contrast" of the Image menu.	☞ Page 32
	● Are the signals of the connected devices possible input signals?	● Check to ensure that they are possible input signals, and input compatible signals accordingly.	☞ Page 18, 20
	● Is the input cable correctly connected?	● Connect the input cable correctly.	☞ Page 19, 21
Projection position on the screen has shifted	● Has the setup position of the projector been shifted?	● Check the setup position of the projector.	—
Image disappears suddenly	● Are the video signals correctly input?	● Check the signals and connection.	☞ Page 18 to 21
Images do not appear on the two-screen mode display	● Are the DVI 1 and DVI 3 terminals connected for input?	● To display images in the two-screen mode, connect the DVI 1 and DVI 3 terminals. The left screen displays images of the DVI 1 terminal, and the right screen displays images of the DVI 3 terminal.	☞ Page 20, 21
Images do not appear immediately after power is turned on.	● Formatting is in progress.	● Please wait for a few minutes for the formatting progress to end.	☞ Page 28
The screen does not darken immediately when the projection has ended	● The ending process is in progress.	● Please wait for a few minutes for the ending process to complete.	☞ Page 29

What to do when these messages are displayed

Messages are displayed when the lamp life has expired and when there is input of signals that cannot be used.



Message	Cause (Details)
Lamp Time Over	● Displayed when the lamp time has exceeded 1500 hours. The message is displayed for a period of 3 minutes during each projection. → Replace with a new lamp unit. For details on replacement of the lamp unit, please consult your authorized dealer.
Out of Range	● When there is input of video signals that cannot be used with this unit → Input video signals that can be used.
No Input	● When no device is connected to the input terminal ● When the input terminal is connected but there is no signal → Input the video signals.

Warnings Using Indicators

The lamp time and warning mode are indicated using the indicator.
For details on indicator displays during normal operation, refer to the note below.

No.	Indicator			Description
	STANDBY/ON	LAMP	WARNING	
1	*1	Light On (Yellow)	—	About time to replace lamp (Lamp time has exceeded 1400 hours)
2				When the lamp life has expired (Lamp time has exceeded 1500 hours. Message displayed. (☞ Page 46))
3	*2	Blinking (Yellow)	Light On (Red)	When lamp does not light up and projection fails
4				When the lamp goes off during projection
5				Temperature around the lamp is high
6	*2	—	Light On (Red)	When the internal temperature is unusually high
7				When the external temperature is unusually high
8				When the cooling fan stops running
9				When error occurs in the circuit operation

*1: The indicator lights up in red when in the standby mode, and in green when in the operating mode.
*2: The indicator lights up in red when in the warning mode, and blinks in red when in the cool down mode.

■ Measures when the warning mode appears

When the projector switches to the warning mode (Nos. 3 to 9), projection stops automatically, and the cooling fan runs for about 180 seconds.
After the cooling fan stops running, turn off the main power supply switch, and remove the power plug from the outlet.
Perform the following checks and take the corresponding measures.

No.	Check	Measure
3	● Check whether the projector has been subject to shock during operation.	● Turn on the power again.
4		
5	● Check whether the air inlets are blocked by objects. ● Check to ensure that the external temperature of the projector is normal.	● Allow some time for the projector to cool down.
6		
7		
8		
9		

If the warning indication is displayed again, turn off the main power supply switch after the cooling fan stops running. Then pull out the power plug from the power outlet. Call your authorized dealer for repair.

NOTE:

● Normal indicator display

Indicator			Description
STANDBY/ON	LAMP	WARNING	
Light On (Red)	—	—	When in the standby mode.
Light On (Green)	—	—	When power is supplied (operating mode).
Blinking (Red)	—	—	When cooling down (cool down mode). (☞ Page 29)
Blinking (Green)	—	—	When the projected image is temporarily hidden. (☞ Page 29)

Latest Error

The latest error number appears in the Main Menu when an error occurs in the projector. Error details are as follows:

Error Number	Meaning
01	The lamp does not turn on.
02	Accumulated lamp time has exceeded 1500 hours.
06	The lamp goes off during projection.
08	Abnormal temperature in the projector.
09	Abnormal temperature around the intake vent.
0A	Abnormal temperature around the exhaust vent.
15	The lamp cover is open.
30	Trouble with CPU circuit board.
31	Trouble with MAIN circuit board.
32	Trouble with DD-RB circuit board.
33	Trouble with DD-G circuit board.
40	FAN1 (the cooling fan for DD) has stopped.
41	FAN2 (the cooling fan for the lamp) has stopped.
42	FAN3 (the cooling fan for over all exhaust) has stopped.
43	FAN4 (the cooling fan for the MAIN circuit board) has stopped.
44	FAN5 (the cooling fan for the lighting system (PCS)) has stopped.
46	FAN7 (the cooling fan for the device) has stopped.
47	FAN8 (the cooling fan for the power supply of the lamp) has stopped.
49	FAN10 (the cooling fan for DD) has stopped.
4A	FAN11 (the cooling fan for DD) has stopped.

Specifications

■ General

Power supply	AC 110 V to 120 V, AC 200 V to 240 V 50/60 Hz
Power consumption	1230 W (Standby mode: 2.7 W)
Current consumption	Max 10.9 A (AC 110 V to 120 V) Max 6 A (AC 200 V to 240 V)
Calorific power	4428 kJ/h (1058 kcal/h)
Air capacity	Intake: Approx. 3 m³/min Discharge: Approx. 3 m³/min
Allowable operating temperature range	10°C to 35°C
Allowable operating humidity range	Less than 80 % (no condensation)
Allowable storage temperature range	–5°C to 60°C
Installation height	Operation guarantee: 2000 m and below Performance guarantee: 1500 m and below
Dimensions (Width × Depth × Height)	663 mm × 803 mm × 342 to 362 mm (Excluding lens, and small protrusions)
Mass	56 kg (Excluding lens)

■ Optical System

Projection method	D-ILA analog drive system × 3
D-ILA element *1, *2	1.27" (4096 × 2400 pixels) × 3 pcs (total no. of pixels: 29,491,200 pixels)
Projection lens (optional)	GL-MS4015SZG (1.50:1 to 1.84:1 zoom lens) GL-MS4011SG (1:1.1 Short focal length lens)
Light-source Lamp	825 W xenon lamp
Screen size	80" to 300" (zoom lens) 50" to 250" (Short focal length lens)
Projection distance	Approx. 2.6 m to 12 m (zoom lens) Approx. 1.2 m to 6 m (Short focal length lens)

■ Signal System

Digital video Input format	4096 × 2400, 4096 × 2160, 3840 × 2400, 3840 × 2160, 2048 × 1200, 2048 × 1080, 1920 × 1200, 1920 × 1080, 1600 × 1200, 1280 × 1024, 1024 × 768, 800 × 600, 640 × 480
DVI clock (Rx clock)	to 165 MHz (Single) to 330 MHz (Dual)
Display resolution	4096 × 2400

■ Terminal

Video input	DVI-D (dual link) 24 pins (supports 12-bit extended input) × 4 (supports HDCP*3)
LAN	RJ45 × 1
USB	Type B (Slave) × 1
RS-232C	D-sub 9 pins (male) × 1

■ Accessories

Power cord (☞ Page 8)

*1 D-ILA is the abbreviation for Direct drive Image Light Amplifier.

*2 D-ILA devices are manufactured using extremely high-precision technology. Pixel effectiveness is 99.99 %. Only 0.01 % or less of the pixels would either not lit up or remain permanently lit up.

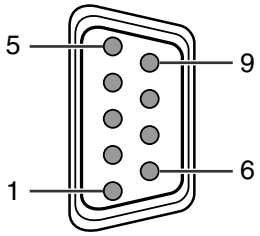
*3 HDCP is the abbreviation for High-bandwidth Digital Content Protection system. Images from the DVI input terminal may not be displayed due to HDCP specification changes.

- The open source software is embedded in this product. For more information, please go to: http://www.jvc-victor.co.jp/english/download/lnx/07jvc-pj/
- Specifications and appearance of this product may be subject to change for improvement without prior notice.
- Please note that some of the pictures and illustrations may have been abridged, enlarged or contextualized in order to aid comprehension. Images may differ from the actual product.

Specifications (Cont'd)

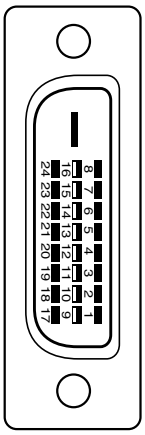
■ Pin Assignment

● RS-232C Terminal



Pin No.	Signal	Operation	Signal Direction
2	RxD	Incoming Data	This Projector ← PC
3	TxD	Outgoing Data	This Projector → PC
5	GND	Signal Ground	—
1,4,6 to 9	NC	—	—

● DVI-D Terminal



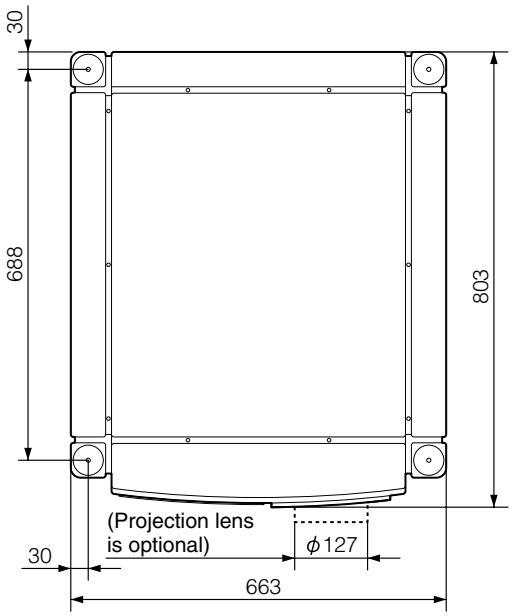
Pin No.	Signal	Pin No.	Signal
1	TMDS Data 2–	13	TMDS Data 3+
2	TMDS Data 2+	14	TMDS +5 V Power Supply
3	TMDS Data 2/4 Shield	15	Earth (+5 V)
4	TMDS Data 4–	16	Hot Plug Detection
5	TMDS Data 4+	17	TMDS Data 0–
6	DDC Clock	18	TMDS Data 0+
7	DDC Data	19	TMDS Data 0/5 Shield
8	NC	20	TMDS Data 5–
9	TMDS Data 1–	21	TMDS Data 5+
10	TMDS Data 1+	22	TMDS Clock Shield
11	TMDS Data 1/3 Shield	23	TMDS Clock +
12	TMDS Data 3–	24	TMDS Clock–

TMDS = Transition Minimized Differential Signaling
DDC = Display Data Channel

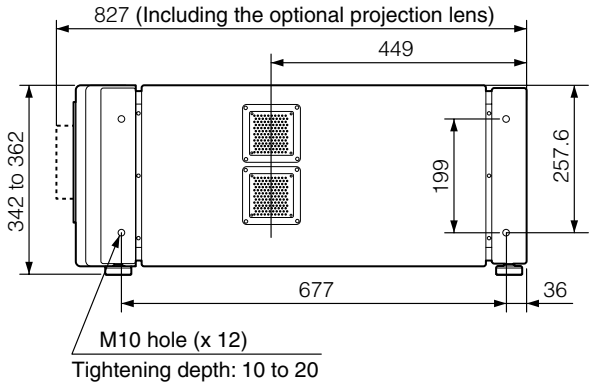
Dimensional Outline Drawing

(Unit: mm)

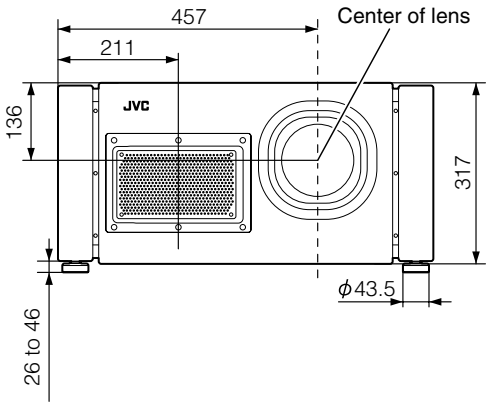
■ Top



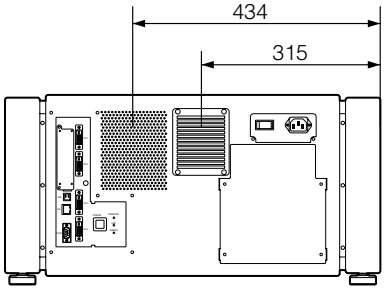
■ Side



■ Front



■ Rear



CAUTION:

- Using screws with dimensions other than those specified in the above diagram may cause the projector to drop or malfunction.

DLA-SH4KNL

D-ILA® PROJECTOR

JVC

© 2008 Victor Company of Japan, Limited

Printed in Japan
0608TTH-SW-VP